Safety Authority

British Columbia Safety Authority

State of Safety Report | 2011

2011

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Message from the Chair

I thank you for your interest in the BC Safety Authority's 2011 State of Safety Report. This report reflects the wide-ranging scope of work done by our staff in studying reported incidents and assessing regulated work and equipment across British Columbia. It is a publication that reflects the myriad of events and activities that shape our ever changing and evolving technical safety system.

To advance the pursuit for safety excellence, the BC Safety Authority endeavors to identify and understand the risks that exist and emerge from the range of technologies we regulate. This is a necessary step that underpins our goal of preventing accidents before they occur. In order to support technological change and progress, we challenge ourselves to advance our capacity for understanding risks. This makes it all the more important to apply a critical understanding towards all the data that we gather, from incident investigations to stakeholder consultations.

To optimize the management of those risks, we apply a portfolio of tools including, but not limited to, enforcement, policy changes, information drives and continued collaboration with our stakeholders. We are confident that this provides a robust safety system in our province and keeps us open to improvements over the long term.

Safety excellence throughout the regulated technologies benefits from a strong participation from all those who call British Columbia their home. Through this report, we contribute to the body of knowledge that should keep us well-informed of our safety system.

I thank my fellow directors for providing prudent counsel to our organization and to our officers and staff for their uncompromising passion in keeping our province safe.

P. Cook

Peter Cook
Chair of the Board

Message from the President and Chief Executive Officer

The safety system in British Columbia consists of a vast network of owners, operators, skilled professionals, homeowners and the public, utilizing and working with quality products and to accepted practices. Their aim, and ours, is to improve the productivity of our industries and the quality of our homes without compromising safety or confidence. In addition to investigating incident reports, the British Columbia Safety Authority samples the regulated equipment and work of homeowners and professionals to verify that conditions are safe and compliant to applicable regulations. Assessment results are used to influence safe behaviours. This 2011 State of Safety report represents the output of the BC Safety Authority and its contribution to the safety system.

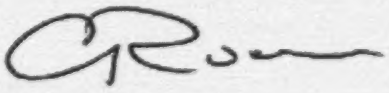
In 2011, we sought to understand risk by attending to over 500 incidents and completing over 60,000 assessments involving regulated work or equipment. One of our biggest concerns regarding the safety system is the amount of regulated work that is completed without the required permits. Permits enable the system to assign qualified people to complete and verify the integrity of the work as well as enable the community to learn from assessment and audit results.

In 2011, our efforts to improve the management of risk focused on:

- licensing businesses and certifying persons that demonstrated the necessary abilities to complete safe and compliant work,
- educating industry professionals about risks and hazards observed as well as changes to regulations and technical standards,
- enforcing regulations through orders and penalties to reduce unpermitted work and correct unsafe conditions and
- developing amendments to regulations and technical standards to support innovation in our industries.

The BC Safety Authority believes that transparency is necessary to regulate in a fair and accountable manner as well as to deliver safer outcomes. This 2011 report improves upon the transparency of our safety operations and outputs by collecting and detailing our safety activities and enforcement actions. Through investments in our information technology system and a dedicated focus toward sharing results, we plan to further increase transparency in years to come.

I extend my appreciation to all those involved in the safety system in BC who sought to share information and improve public safety.



Catherine Roome, P.Eng.
President and Chief Executive Officer

About the BC Safety Authority

The Safety Authority employs over 300 people dedicated to leading a safety system and delivering safety services to the following industry sectors:

- Amusement devices
- Boilers, pressure vessels and refrigeration systems
- Electrical equipment and systems
- Elevating devices, such as elevators and escalators
- Natural gas or propane appliances and systems, including hydrogen
- Passenger ropeways, such as aerial trams and ski lifts
- Railways, including rapid transit

Our services include:

- Assessing work and equipment to verify regulatory compliance and understand safety risks
- Certifying individuals and licensing contractors and operators to perform regulated work
- Supporting clients in the development of Alternative Safety Approaches, and auditing their safety management plans or equivalent standard approaches
- Taking enforcement actions that encourage an impartial and equitable safety system in BC
- Educating our clients and the public about safety issues to support them in managing risks
- Contributing to provincial and national code development and updating regulations for each industry sector we serve.

The BC Safety Authority operates within a legislative and regulatory framework that includes:

- *Safety Authority Act*
- *Safety Standards Act and Regulations*
- *British Columbia Railway Act, Railway Safety Act and Regulations*
- *Administrative Tribunals Act*
- *Freedom of Information and Protection of Privacy Act*
- *Ombudsman Act*
- *Offence Act*

For further information, including our Annual Report and Business Plan, visit our website at www.safetyauthority.ca.

About the State of Safety Report

The BC Safety Authority receives reports of incidents and conducts assessments of regulated equipment and work[1]. Through investigation and assessment, the BC Safety Authority advances the knowledge of safety risks and focuses attention toward managing those risks.

The 2011 State of Safety report is the eighth publication of its kind from the BC Safety Authority. In accordance with the administrative agreement between the Province of BC and the BC Safety Authority, the State of Safety report provides:

- Analysis of incident and injury trends in all sectors regulated by the BCSA
- Explanations for incident and injury trends, particularly significant deviations
- Comparisons, where possible, between BC incidents and those of other jurisdictions
- Responses to information gathered from investigations, including understanding causes and taking necessary action to resolve systemic problems
- A summary of risk-based initiatives to educate and communicate with the general public, clients and stakeholders
- A summary of national committees and inter-provincial working groups where BCSA has participated and provided leadership
- A listing of enforcement actions taken by the BC Safety Authority.

This report is organized into two main sections. Each section aims to provide an understanding of safety hazards observed in 2011 followed by the efforts led by the BC Safety Authority to address those hazards.

The first section provides an overall summary of hazards and safety management efforts at an organizational level while the second section provides a similar analysis specific to each industry sector regulated by the BC Safety Authority.

1 Certain municipalities administer portions of the *Safety Standards Act* in lieu of the BC Safety Authority. These municipalities and their scope of administration are detailed in Appendix A.

Incidents

Incidents involving work or equipment regulated under the *Safety Standards Act* are required to be reported to the appropriate Provincial Safety Manager. The BC Safety Authority investigates many of these incidents to gain an understanding of safety hazards in BC and what actions can be taken to manage those hazards. Figures 1 and 2 below show the total number of incidents reported to the BCSA in 2011 and previous years.

FIGURE 2:
Incident Reports by Regulated Industry Sector 2007-2011

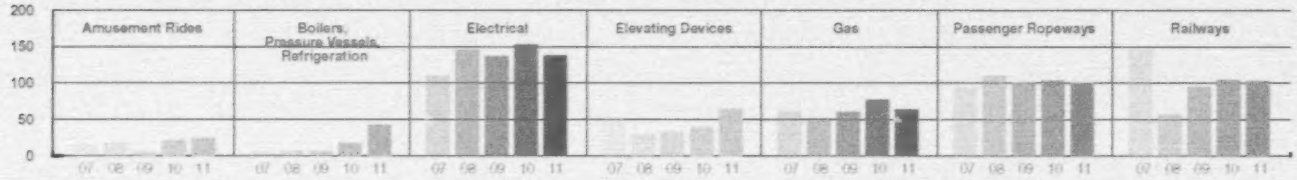
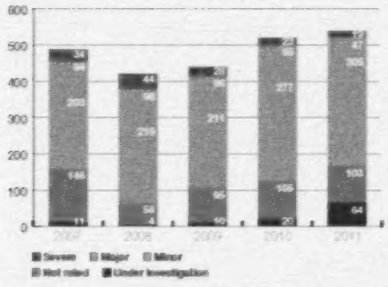


FIGURE 1:
Incident Reports 2007-2011



Note 1: Incidents identified as *UNDER INVESTIGATION* were open at the time of report preparation.

TABLE 1:
Severe and Major Incidents in 2011

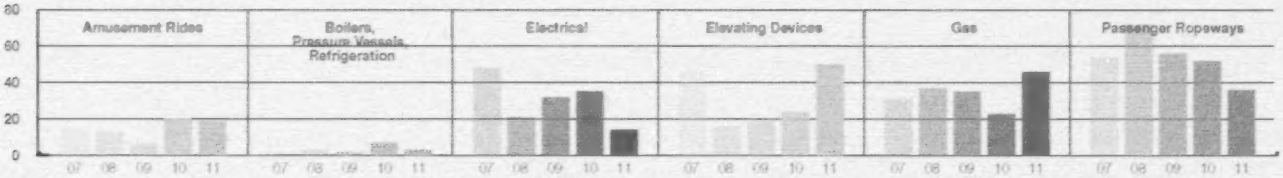
SEVERE		MAJOR	
QTY	TYPE	QTY	TYPE
12	Fires, explosions and gas leaks	41	Fires, explosions and gas leaks
2	Arc flash	3	Passenger falls from equipment
1	Carbon monoxide poisoning	1	Carbon monoxide poisoning
1	Amusement device ran over passenger's finger	1	Electrical fault to ground
3	Near miss or potential to have been severe	1	Ropeway carrier slid on haul line

In 2011, there was no significant change in the overall number and rating of incidents reported to the BCSA relative to previous years. Railway accidents and incidents are not given a rating and are identified as *NOT RATED* in Figure 1. Increases in the amount of *MINOR* boiler and elevating incident reports were observed but are not considered to be an indication of increasing risk. Fire related incidents were the predominant type of *SEVERE* and *MAJOR* events reported, which is consistent with previous years.

Injuries

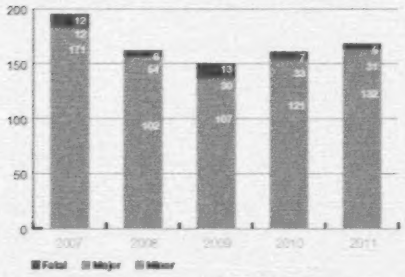
Injuries reported as a result of incidents are an important indicator of hazards inherent to the operation of regulated equipment. Injuries resulting from the incidents reported above are summarized below.

FIGURE 4:
Injury Reports by Regulated Industry Sector 2007-2011



Note: Railway injury reports are not included in Figure 4 since the data was not available for 2007-2010.

FIGURE 3:
Injuries reported 2007-2011



Note 1: Injuries associated with incidents *UNDER INVESTIGATION* are excluded.

TABLE 2:
Fatal and Major Injuries in 2011

FATAL		MAJOR	
QTY	TYPE	QTY	TYPE
5	All five accidental fatalities reported in 2011 resulted from residential fires where electrical equipment was suspected to have caused the incident.	19	Broken bones, lacerations, concussions and dislocations
		6	Soft tissue sprains or strains
		3	Carbon monoxide poisoning
		2	Burns from gas or electrical fires or equipment
		1	Electrical shock

In 2011, there was no significant change in the overall number and rating of injuries reported to the BCSA relative to previous years. *FATAL* and *MAJOR* injuries were predominantly related to fires. Other serious injuries resulted from slips, trips and falls from equipment, malfunctioning residential gas equipment and unsafe electrical work practices.

Assessments of Regulated Work

The BC Safety Authority assesses regulated activities and equipment by sampling permitted work. Where permitted work is completed by licenced businesses and qualified persons, compliance declarations are submitted and assessment effort is focused on equipment that carries a greater risk of incident or injury.

TABLE 3:
Permitted Work, Physical Assessments Completed and Non-Compliances Recorded – 2011

	AMUSEMENT DEVICES	BOILERS & PRESSURE VESSELS	ELECTRICAL	ELEVATING DEVICES	GAS	PASSENGER ROPEWAYS	RAILWAYS	TOTAL
Installation Permits	25	951	63,754	863	34,393	24	Not Applicable	100,010
Operating Permits	440	60,342	7,216	22,609	1,866	291	70	92,834
Physical Assessments	416	10,094	33,873	2,885	12,862	293	86	60,509
Non-compliances **(Note 1)**	967	1,520	9,425	5,158	4,996	941	99	23,106

Note 1: Boilers and Pressure Vessels records the number of rejected units resulting from physical assessments. A rejected unit may have one or more non-compliances that require correction.

FIGURE 5:
Installation Permits 2007-2011

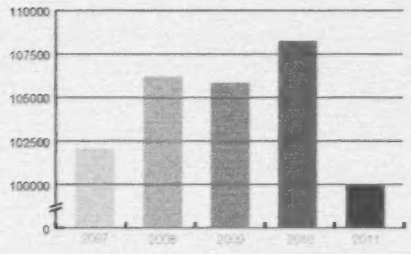


FIGURE 6:
Operating Permits 2007-2011

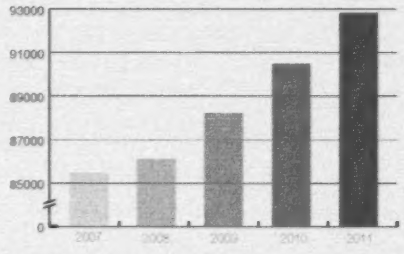


FIGURE 7:
Physical Assessments 2007-2011

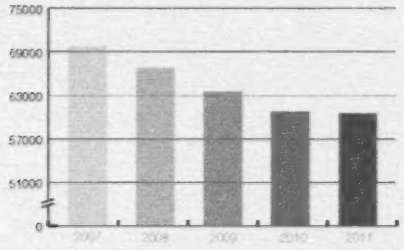
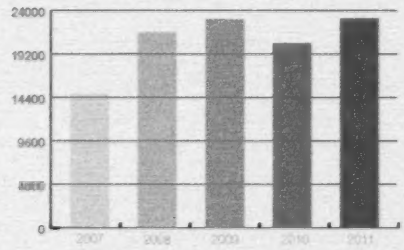


FIGURE 8:
Non-Compliances 2007-2011



Management Discussion

The BC Safety Authority is challenged by the inconsistency of incident reporting in many of its industry sectors. It is likely that unreported incidents involving regulated equipment occur and that regulated work is not consistently completed with the required permits. Not reporting incidents and not obtaining permits for regulated work is illegal and inhibits the BCSA's ability to learn from incidents and assessments, hindering the identification of unsafe conditions and the realization of improvements to the safety system.

Unreported incidents and unpermitted work represents an important opportunity for improving the understanding of safety risks. In 2011, the BC Safety Authority initiated a significant investment in the modernization of its information technology system. This modernization project will extend into 2012 and 2013; ultimately enabling cross agency and jurisdictional data sharing, geo-spacial referencing and provide a powerful suite of tools to augment the day-to-day business of safety. Importantly, these tools will enhance our ongoing focus to improve the understanding of risk and optimize the development of assessment, enforcement, education & outreach, and research activities.

Stakeholder Engagement Program

The BC Safety Authority values what the stakeholders of the safety system have to say. As needed consultations are led by the BC Safety Authority for specific initiatives while standing advisory committees are organized by the BCSA to engage industry with regulatory development planning and hazard management. Risk Reduction Working Groups are formed with industry stakeholders to identify practical means to address specific hazards. The BC Safety Authority also hosts Safety Standards Administrators' Groups to improve collaboration between the BCSA and municipalities that have retained responsibilities under the *Safety Standards Act* (Appendix A). The BC Safety Authority also engages industry and regulators through Industry Association participation in consultations and National Codes and Standards Committee activities.

TABLE 4:
Stakeholder Engagement Activities – 2011

	Amusement Devices	Boilers and Pressure Vessels	Electrical	Elevating Devices	Gas	Passenger Ropeways	Railways
Technical Advisory Committee Meetings	1	4	4	2	3	2	3 **(Note 1)**
Risk Reduction Working Groups	0	1	3	3	4	1	**(Note 1)**
Safety Standards Administrators' Meetings	N/A	N/A	2	N/A	2	N/A	N/A
As Needed Consultation Sessions	1	2	1	3	0	1	0
Associations and National Codes & Standards Committees **(Note 2)**	3	9	4	18	7	3	N/A

Note 1: In Railways, Town Hall Meetings achieve the intent of the advisory committee meetings and risk reduction working groups.
Note 2: Detailed listings of Associations and National Codes & Standards Committees are contained in Appendix D.

Tech Talks and Town Hall Meetings

The BC Safety Authority conducts regular discussions with licence and certificate holders as well as industry stakeholders to share knowledge of hazards, best practices and industry regulation and standard changes. In the Electrical and Gas industry sectors, these discussions are called Tech Talks while in Railways, they are Town Hall meetings.

Electrical	Gas	Railways
71 Tech Talks hosted	3 Tech Talks hosted	3 Town Hall meetings hosted
1,773 participants	152 participants	35 participants
8 Topics Covered	2 Topics Covered	7 Topics Covered
Presented throughout the province.	Presented in Abbotsford, Surrey and Whistler.	Presented in Fort Steele, New Westminster and Prince George.

Targeted Incident Reduction

In 2011, the BC Safety Authority piloted a Targeted Incident Reduction (TIR) initiative. TIR focuses BC Safety Authority resources toward reducing specific risks that have been identified through incident reports. In its pilot year for TIR, the BC Safety Authority has focused an effort toward reducing the risk of carbon monoxide poisoning from products that we regulate. Carbon Monoxide poisoning is a serious hazard. These hazards occur when appliances are not installed, maintained and used in a safe manner. In 2011, 11 incident reports were received by the BC Safety Authority involving carbon monoxide poisoning associated with regulated gas equipment. TIR Actions taken are discussed further in the Gas section of this report and are detailed in the BC Safety Authority's *Targeted Incident Reduction - Carbon Monoxide Poisoning* 2011 report.

Communications

The BC Safety Authority issues public media releases to warn of specific hazards and advise the public of steps that they can take to reduce their risk of injury. In 2011, the Authority issued media releases relating to each industry sector.

TABLE 5:
Hazard Awareness Media Release Summary – 2011

	Amusement Devices	Boilers and Pressure Vessels	Electrical	Elevating Devices	Gas	Passenger Ropeways	Railways
Media Releases	5	4	7	4	14	5	5

Licensing and Certification

The BC Safety Authority issues licences to businesses that perform regulated work. The Authority also issues certificates of qualification to individuals that demonstrate a required level of knowledge and experience. Licensing and certification ensures that minimum standards of knowledge and capability are maintained regarding the completion of regulated work.

TABLE 6:
New Licences & Certif. of Qualification Issued in 2011 for Each Industry Sector

	Amusement Devices	Boilers and Pressure Vessels	Electrical	Elevating Devices	Gas	Passenger Ropeways	Railways	Total
New Licences	20	48	352	1	216	4	**Note 1**	**641**
New Certificates of Qualification	0	514	568	147	1,071	3	**Note 1**	**2,303**

Note 1: The *Railway Safety Act* does not provide for the use of Licences or Certificates of Qualification.

Enforcement

The BC Safety Authority enforces compliance with the *Safety Standards Act* where individuals have failed to make their work or equipment compliant and/or have chosen to operate outside of the safety system. Safety Officers work with industry to establish compliance and address unsafe conditions. However, where those efforts do not achieve results, the BC Safety Authority may issue a Compliance Order and eventually a Monetary Penalty or Discipline Order in accordance with the *Safety Standards Act*.

TABLE 7:
Compliance Orders, Monetary Penalties and Discipline Orders Issued – 2011

	AMUSEMENT DEVICES	BOILERS AND PRESSURE VESSELS	ELECTRICAL	ELEVATING DEVICES	GAS	PASSENGER ROPEWAYS	RAILWAYS	TOTAL
Compliance Orders	2	1	107	5	51	0	Note 1	166
Monetary Penalties	2	0	4	0	5	0	Note 1	11
Discipline Orders	0	0	0	0	2	0	Note 1	2

Note 1: Compliance Orders, Monetary Penalties and Discipline Orders are not defined in the *Railway Safety Act*.

Regulatory Instruments

The BC Safety Authority uses certain regulatory instruments to assist with the administration of the *Safety Standards Act* and the *Railway Safety Act*. Safety Orders are issued to prevent or reduce the risk of personal injury or damage to property. Directives are instruments that clarify or provide new interpretation of a regulation or code. Compliance with Safety Orders and Directives is mandatory and enforceable by the BCSA. Information bulletins provide helpful information and clarification on existing regulations or codes. The BC Safety Authority also works with Government to amend the Acts and Regulations where appropriate.

TABLE 8:
Regulatory Instruments and Amendments in 2011

	AMUSEMENT DEVICES	BOILERS AND PRESSURE VESSELS	ELECTRICAL	ELEVATING DEVICES	GAS	PASSENGER ROPEWAYS	RAILWAYS	TOTAL
Safety Orders	0	0	0	1	0	2	Note 1	3
Directives	0	2	2	5	2	0	Note 1	11
Bulletins	0	1	3	3	2	0	Note 1	9
Amendments	0	1	0	0	1	0	0	2

Note 1: The *Railway Safety Act* does not provide for the use of Safety Orders, Directives or Bulletins.

Alternative Safety Approaches

The BC Safety Authority has been working with industry and government to develop Alternative Safety Approaches as a regulatory alternative, supporting innovation and leadership in safety management. The new *Alternative Safety Approaches Regulation* became effective April 1, 2011. The new regulation creates two client-optional Alternative Safety Approaches: Equivalent Standard Approaches which will replace current Equivalent Standards Agreements and Safety Management Plans which are new. The regulation enables industry participants to comply with the *Safety Standards Act* by employing cost effective alternative approaches that achieve safety outcomes and are comparable to the previous, prescriptive regulations.

Code and Standard Development

BC Safety Authority employees participate with and lead many technical code and standard developments. Participation assures that challenges facing BC industries are presented and considered during national codes and standards development. In 2011, employees directly participated with code and standard development. The BC Safety Authority has collaborated with the Government of BC to adopt updated industry codes and standards in two regulations in 2011, improving safety standards and fostering harmonization across Canada and internationally.

Management Discussion

The BC Safety Authority is keenly focused on developing technical safety programs that continuously improve and optimize means for managing safety risks. The technical safety system encompasses a myriad of practices, regulations, participants, and accountabilities. The BCSA organizes its risk management activities within the structure of an Accident Prevention Model comprising of four pillars; Education & Outreach, Assessment, Enforcement and Research. The outputs of our prevention activities in 2011 are summarized above. Moving forward, incident investigation and risk-based assessment will continue to form a primary source of information about hazards, risks and compliance, supporting our research activities. To promote safety system participation and sustained compliance with safety legislation, the BCSA will continue to focus on improving the efficacy of its efforts in education & outreach and enforcement. By focusing our efforts on risk, we work towards building confidence in the safety system while supporting innovation, all culminating in a safer, and more prosperous British Columbia.

In the Amusement Devices (AD) Safety Program at the BC Safety Authority, we are responsible for overseeing the safety of amusement ride installation and operation throughout British Columbia in accordance with the *Safety Standards Act* and the *Elevating Devices Safety Regulation*. The types of regulated amusement rides range from small waterslides and inflatable play equipment to larger rides such as roller coasters operating at the Pacific National Exhibition.

Incidents

The following summarizes incidents reported to the BC Safety Authority involving regulated Amusement Devices.

FIGURE 9:
AD Incident Reports 2007-2011

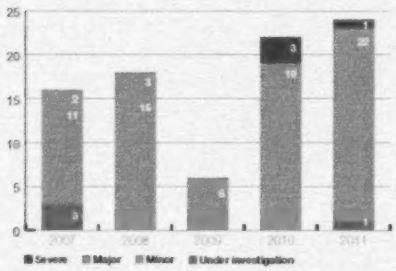


TABLE 9:
AD Severe Incident 2011

RATING	DESCRIPTION
Severe	While exiting an amusement ride, a child fell and was struck by the next passenger carrier that was still in motion. The incident resulted in a serious laceration to the child's index finger. It was reported that the child was evacuated to a major hospital where the finger may have needed to be amputated.

The *SEVERE* incident reported to the BC Safety Authority is summarized above. Of the 22 *MINOR* incidents, most were slips, trips, falls and unintended contact while moving around regulated equipment. There were seven reports of equipment malfunctioning and three reports where people were injured exiting water slides.

Injuries

Injuries reported as a result of amusement device incidents in 2011 are summarized below in Figure 10.

FIGURE 10:
AD Injuries Reported 2007-2011

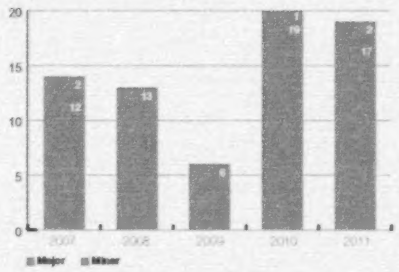


TABLE 10:
AD Major Injuries Reported in 2011

RATING	DESCRIPTION
Major	Possible amputation of a child's index finger. The incident resulting with this injury was classified as severe and is described in the previous table.
	Possible leg fracture. After exiting a waterslide, the rider reported entering the landing pool and feeling their ankle turn and "snap".

The *MAJOR* injuries reported to the BC Safety Authority are identified above. *MINOR* injuries included lacerations, bruises and bumps from unintentional contact or falls.

Assessments of Regulated Work

Amusement Devices Safety Officers assess new installations as well as operating equipment as part of regular maintenance. Non-compliances are recorded when work does not conform to the applicable regulation.

FIGURE 11: AD Installation Permits

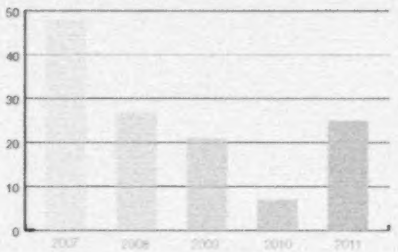


FIGURE 12: AD Operating Permits

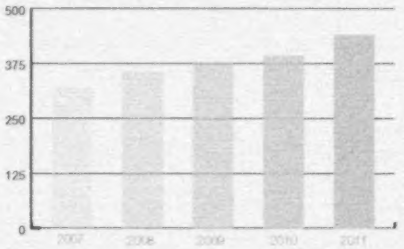


FIGURE 13: AD Physical Assessments

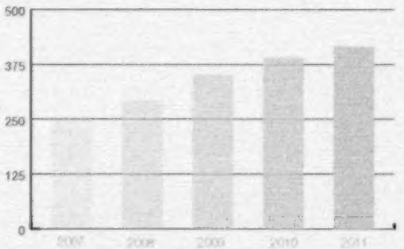
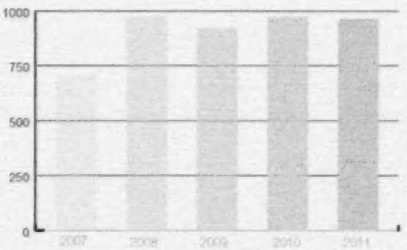


FIGURE 14: AD Non-Compliances



An increase in operating permit volumes is attributed to an increase in the number of registered inflatable amusement devices in 2011. This was a result of a focused effort to identify unpermitted work in this area and ensure the operators of these devices are participating in the safety system. The increase in operating permits is also a result of three more zipline operations installed in the province.

Managing Amusement Devices Safety Risks

Enforcement Actions

In 2011, two compliance orders and two monetary penalties were issued in the Amusement Devices sector. Details of each compliance order and monetary penalty are included in Appendix B.

TABLE 11:
AD Enforcement Actions Taken in 2011

ACTION	CATEGORY	QTY.ISSUED
Compliance Order	Unsafe Use of a Regulated Product	1
	Outstanding Non-Compliances	1
Monetary Penalty	No Permit	1
	Unsafe Use of a Regulated Product	1

Licensing and Certification

The BC Safety Authority verifies that Amusement Devices are installed, operated and maintained by qualified and knowledgeable professionals. In 2011, 20 Amusement Devices contractor licence was issued.

Media Releases

The BC Safety Authority issued five media releases in 2011 related to Amusement Device safety. Four were quarterly releases announcing enforcement actions taken in all regulated industry sectors including Amusement Devices. One was titled "Stay Safe on Amusement Rides this Summer", providing the following safety tips to riders:

- Follow the rules – they are there for your safety
- Stay seated and hold on
- If it's loose, you'll lose it
- Your health comes first – be aware of existing health conditions and rider safety
- It's okay to be scared (don't exit the ride prematurely).

Stakeholder Engagement Program

The Amusement Devices Technical Advisory Committee met once in 2011 and it was decided to disband the committee. The BC Safety Authority felt that due to the diversity of groups (six subtechnologies) within the committee, an advisory committee was not the most effective engagement approach. The BC Safety Authority will be establishing a new engagement process in 2012. There were no risk reduction working groups in the Amusement Devices sector in 2011.

Safety Manager's Discussion

A continued focus on inspection and education in the Amusement Devices sector in 2011 has increased the licensed contractors' awareness of their obligations with respect to the regulations and standards. Many companies that were not participating in the safety system were identified in 2011 and this has resulted in the issuance of 20 new amusement devices contractor licenses. We have been assisted by municipalities throughout the province in creating awareness of amusement device requirements and we will continue to work with them to identify non-compliant work. Our efforts on the Canadian harmonization of ASTM F24 (American Standards for Testing and Materials - Amusement Rides and Devices) requirements continued in 2011. This task has experienced many challenges since it is the first effort to harmonize these standards with any other country and the process established through this work will be used as a model for future harmonization efforts with other nations.

Jason Gill
Amusement Devices and Passenger Ropeways
Safety Manager

In the Boilers and Pressure Vessels (BPV) Safety Program at the BC Safety Authority, we are responsible for overseeing the design, construction, installation and operation of boilers, pressure vessels and refrigeration plants throughout British Columbia in accordance with the *Safety Standards Act* and the *Power Engineers, Boiler, Pressure Vessel and Refrigeration Safety Regulation*.

Incidents

The following summarizes incidents reported to the BC Safety Authority involving regulated BPV equipment.

FIGURE 15:
BPV Incident Reports 2007-2011

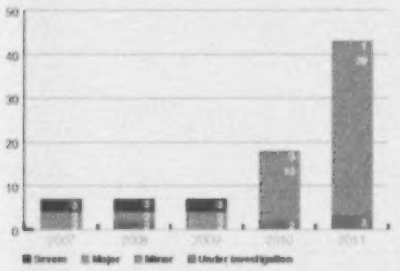


TABLE 12:
BPV Major Incident 2011

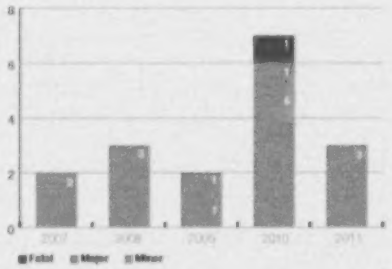
RATING	DESCRIPTION
Major	A furnace-side natural gas explosion damaged furnace inspection doors, casing panels and some pipe fittings of a boiler. Investigation discovered that the boiler had been running outside of the manufacturer's operating tolerances and that proper maintenance actions had not been taken.

The *MAJOR* incident reported to the BC Safety Authority is summarized above. Of the 39 *MINOR* incidents, most were leaks, cracks and operational malfunctions. There were five reports of refrigerant leaks (ammonia) and a few *MINOR* explosions or fires. There is a noted increase in *MINOR* incident reports. The BPV program has been working with industry to improve incident reporting practices and it is considered that the increased number of reports is a reflection of that effort and not reflective of increasing risk.

Injuries

Injuries reported as a result of BPV incidents in 2011 are summarized below in Figure 16.

FIGURE 16:
BPV Injuries Reported 2007-2011



There were no *FATAL* or *MAJOR* injuries reported to the BC Safety Authority in 2011. *MINOR* injuries reported include burns from fires/explosions and bronchial irritation as a result of a refrigerant (ammonia) leak.

Assessments of Regulated Work

BPV Safety Officers assess new installations as well as operating equipment as part of regular maintenance. Non-compliances are communicated to equipment operators by Certificates of Inspection when work is assessed as not conforming to the applicable regulation.

FIGURE 17: BPV Installation Permits

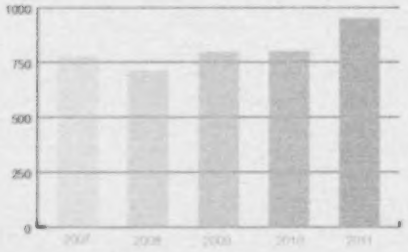


FIGURE 18: BPV Operating Permits

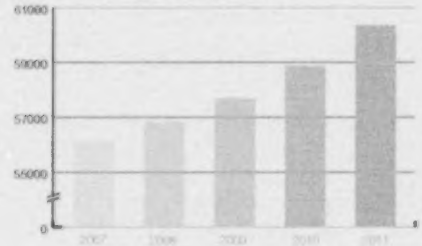


FIGURE 19: BPV Physical Assessments

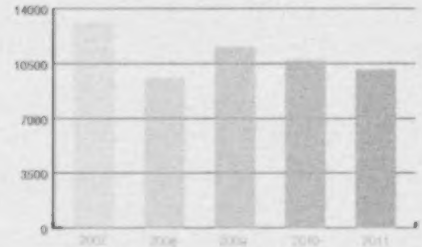
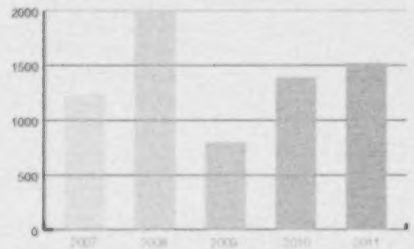


FIGURE 20: BPV Rejected Units



Note 1: Boilers and Pressure Vessels records the number of rejected units resulting from physical assessments. A rejected unit may have one or more non-compliances that require correction.

The leading non-compliance found by BPV Safety Officers during assessments was not having appropriately qualified persons working in a plant including regulated work completed by persons without the proper permits or licenses and the operation of plants without adequate supervision.

Managing Boilers & Pressure Vessels Safety Risks

Enforcement Actions

In 2011, one compliance order was issued in the Boilers and Presser Vessels sector for performing work with an expired licence. Details are contained in Appendix B.

Licensing and Certification

The BC Safety Authority verifies that BPV equipment is installed, operated and maintained by qualified and knowledgeable professionals. In 2011, 48 Boilers, Pressure Vessels and Refrigeration contractor licences and 514 certificates of qualification were issued to individuals that demonstrated the required capabilities to produce safe work.

TABLE 13:
BPV Licences and Certificates of Qualification issued in 2011

TYPE	DOCUMENT	QTY. ISSUED
Licence	Contractor Licence	48
Certificate of Qualification	1st Class Power Engineer	2
	2nd Class Power Engineer	12
	3rd Class Power Engineer	96
	4th Class Power Engineer	199
	5th Class Power Engineer	47
	Ice Facility Operator	59
	Refrigeration Operator	18
	Boiler Safety Awareness	32
	Refrigeration Safety Awareness	49

Regulatory Instruments and Amendments

The BC Safety Authority issues safety orders, directives and information bulletins to stop unsafe activity and provide clarification of regulatory requirements and interpretations. Additional details can be found in Appendix C or at www.safetyauthority.ca.

TABLE 14:
BPV Regulatory Instruments issued in 2011

TYPE	DOC N°	TITLE
Directive	D-BP 2011-01	Inspection Requirements for Piping Systems and Piping Components
	D-B6 070101 1 Revision 03	(Revised) Incident Reporting Requirements with Respect to Boilers, Pressure Vessels and Refrigeration Technology
Bulletin	IB-BP 2011-01	New Boiler and Pressure Vessel Codes Adopted

The *Power Engineers, Boiler, Pressure Vessel and Refrigeration Safety Regulation* was amended in 2011, adopting addenda to current editions of codes, new editions of codes as well as administrative corrections.

Media Releases

The BC Safety Authority issued four quarterly media releases in 2011, announcing enforcement actions taken in all regulated industry sectors including Boilers and Pressure Vessels.

Stakeholder Engagement Program

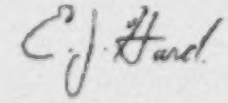
The Boilers and Pressure Vessels Technical Advisory Committee met four times in 2011 to discuss common industry issues, challenges and opportunities.

Safety Manager's Discussion

In 2011 the Boilers, Pressure Vessels and Refrigeration Safety Program concluded a transition from a periodic inspection program to an inspection program that is entirely risk based. Where previously a boiler or pressure vessel was inspected at a set interval regardless of condition, age or operational setting, a risk assessment program (RAP) is now used to indentify the highest risk installations for inspection. Overall the risk-based inspection program has proven to be effective. However, the parameters of the RAP continue to be revised as a result of the deficiencies identified during implementation of the program.

The number of incidents reported in 2011 increased by over 200% which demonstrated significantly improved engagement by our clients in the safety system. The majority of this increase was reports of minor repairs to boilers. However, there was also a number of refrigerant leaks, five of which were ammonia and therefore had the potential to cause serious injuries. The inspection of arenas and other recreational ice facilities was prioritized by safety officers to ensure the refrigeration plants were operated by certified individuals, conformed to all codes and had adequate operating procedures to reduce the risk of refrigerant leaks. Not having an adequate number of qualified staff was the chief issue found during these inspections.

In 2011, preliminary work on applications for Alternative Safety Approaches was completed and a number of these will affect the Boiler Safety Program. In 2012 it is anticipated that the Boiler Safety Program will assist with the approval of a number of pressure vessel integrity management programs approved through Alternative Safety Approaches which will allow clients to implement best practices for safety while maximizing the efficiency of their production operations.



Ed Hurd, P.Eng.
Boilers, Pressurre Vessels and
Refrigeration Safety Manager

In the Electrical Safety Program at the BC Safety Authority, we are responsible for overseeing the safety of electrical systems across British Columbia in accordance with the *Safety Standards Act* and the *Electrical Safety Regulation*. We are responsible for delivering electrical safety services for approximately 50% of the provincial permitting activity. Municipalities that have retained oversight of electrical work are identified in Appendix A.

Incidents

The following summarizes incidents reported to the BC Safety Authority involving Electrical equipment.

FIGURE 21:
Electrical Incident Reports 2007-2011

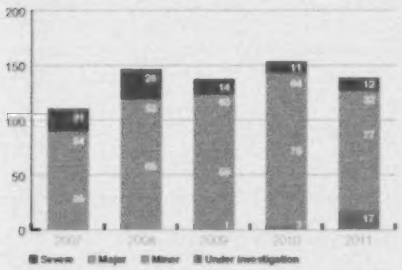


TABLE 15:
Electrical Severe and Major Incidents 2011

RATING	QTY.	DESCRIPTION
Severe	6	Fires where electrical equipment was suspected to have caused the incident.
	3	Contact with power line while excavating or working.
	2	Arc Flash – resulting from failure to follow lock-out procedures while working and unapproved work left in unsafe condition.
	1	Near miss or potential to have been severe – Smart meter installation improperly completed – neutral malfunction.
Major	31	Fires where electrical equipment was suspected to have caused the incident.
	1	Electrical fault to ground.

The *SEVERE* and *MAJOR* incidents reported to the BC Safety Authority are summarized on the left. Of the 77 *MINOR* incidents, most were fires where electrical equipment was suspected to have caused the incident. *MINOR* incidents also included a number of cases where electrical wiring was contacted or damaged while working or excavating.

Injuries

Injuries reported as a result of Electrical incidents in 2011 are summarized below in Figure 22.

FIGURE 22:
Electrical Injuries Reported 2007-2011

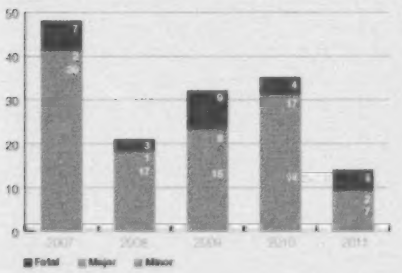


TABLE 16:
Fatal and Major Injuries Reported in 2011

RATING	QTY.	DESCRIPTION
Fatal	5	Residential fires where electrical equipment was suspected to have caused the incident.
Major	1	A fire in a mobile home was reported to have left one occupant with 3rd degree burns to 70% of their body. Extensive use of portable electrical heaters and extension cords was reported and may have been related to the cause.
	1	An unqualified person received a severe shock and puncture wounds on their hand while working on 347 volt wiring that was live.

The *FATAL* and *MAJOR* injuries reported to the BC Safety Authority are identified on the left. Of the 7 *MINOR* injuries, five were smoke inhalations or related to fires while two were minor electrical shocks resulting from contact with live wiring.

Assessments of Regulated Work

Electrical Safety Officers assess new installations as well as operating equipment as part of regular maintenance. Non-compliances are recorded when work does not conform to the applicable regulation.

FIGURE 23:
Electrical Installation Permits

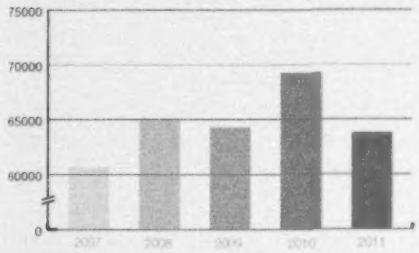


FIGURE 24:
Electrical Operating Permits

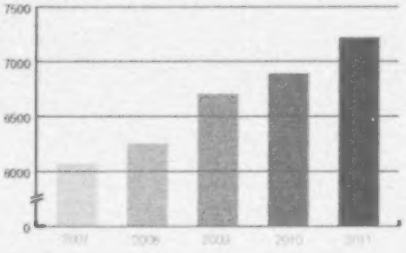


FIGURE 25:
Electrical Physical Assessments

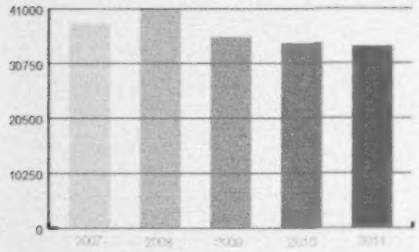
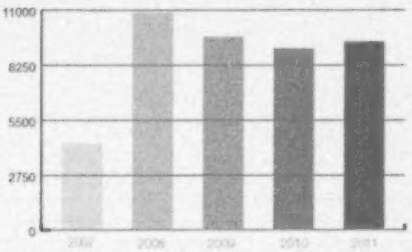


FIGURE 26:
Electrical Non-Compliances



Generally speaking, work completed under each electrical permit is assessed three times. In 2011, nearly 11,000 permits were inspected. Of those permits, nearly 3,200 (30%) were cited as non-compliant and 7,800 (70%) were fully compliant. Of the cited non-compliances, 1,835 (20%) were administrative in nature, and 7,590 (80%) were technical safety violations. Of the 7,590 technical violations, 400 (5%) were considered to be high risk. These high risk violations were associated with only 70 permits.

Tech Talks and Town Halls

The BC Safety Authority conducted 71 electrical Tech Talks throughout the province in 2011 covering 10 topics and reaching 1773 stakeholders. More details of each tech talk can be found in Appendix F.

TABLE 17:
Electrical Tech Talks Conducted in 2011

TITLE/TOPIC	QTY. OF PARTICIPANTS
101 Things Every Electrician Should Know	651
Electrical Workplace Safety / Arc Flash Prevention	196
Barn Wiring / BCSA Website Navigation	14
Electrical Technology General Meeting / Q & A	70
Disposal / Sale of Manufactured Homes	161
Generators	98
Section 60 – Electrical Communication Systems	296
Low Voltage Services Part 1	197
Low Voltage Services Part 2	25
Section 24 – Patient Care Areas	65

Enforcement Actions

In 2011, 116 compliance orders and five monetary penalties were issued in the Electrical sector. Details of each compliance order and monetary penalty issued are included in Appendix B.

TABLE 18:
Electrical Enforcement Actions Taken in 2011

ACTION	CATEGORY	QTY. ISSUED
Compliance Order	Failure to Address a Safety Hazard	1
	Performing work beyond scope of qualifications	2
	No Licence	39
	No Permit	21
	Expired Licence	6
	Expired Permit	16
	No Qualification	1
	Sale of Uncertified Equipment	10
	Outstanding Non-Compliance(s)	8
	Use of Unqualified Workers	3
Monetary Penalty	No Permit	1
	Expired Permit	2
	Provide Records	1

Licensing and Certification

The BC Safety Authority verifies that electrical equipment is installed, operated and maintained by qualified and knowledgeable professionals. In 2011, 352 electrical contractor licences and 568 electrical certificates of qualification were issued to individuals that demonstrated the required capabilities to produce safe work.

TABLE 19:
Electrical Licences and Certificates of Qualification Issued in 2011

TYPE	DOCUMENT	QTY. ISSUED
Licence	Contractor Licence	352
Certificate of Qualification	Field Safety Representative, Class A	76
	Field Safety Representative, Class B	340
	Field Safety Representative, Class C	3
	Field Safety Representative, Full Entertainment	20
	Field Safety Representative, Low Energy Systems	52
	Field Safety Representative, Power Line Technician	3
	Field Safety Representative, Refrigeration Mechanic	10
	Field Safety Representative, Security Alarms Installer	32
	Field Safety Representative, Solar Photovoltaic Systems	7
	Field Safety Representative, Underground Raceway Installer	25

Regulatory Instruments and Amendments

The BC Safety Authority issues safety orders, directives and information bulletins to stop unsafe activity and provide clarification of regulatory requirements and interpretations. Additional details can be found in Appendix C or at www.safetyauthority.ca. There were no amendments to the Electrical Safety Regulation in 2011.

TABLE 20:
Electrical Regulatory Instruments Issued in 2011

TYPE	DOC N°.	TITLE
Directive	D-EL 2011-01	BCEC Section 76 – Temporary Wiring
	D-E3 070115 1 Revision 03	(Revised) Incident Reporting Requirements with Respect to Electrical Technology
Bulletin	IB-EL 2011-01	Section 76 – Temporary Wiring
	B-E3 100224 1 Revision 02	(Revised) Minimum Requirements Retrofit of Fluorescent Luminaires
	B-E3 071019 3 Revision 01	(Revised) Approved Certification Marks for Electrical Products

Media Releases

The BC Safety Authority issued seven media releases in 2011 related to electrical safety. Four were quarterly releases announcing enforcement actions taken in all regulated industry sectors including electrical. Two releases provided instructions for protecting property from electrical damage due to flooding or forest fires and one release discussed the hazards created by home renovations if the work is not conducted with the proper permits in place. A listing of these can be found in Appendix E.

Stakeholder Engagement Program

The Electrical Technical Advisory Committee met four times in 2011 to discuss industry issues of common concern and opportunity. In 2011, there were three Risk Reduction Working Groups in Electrical, dedicated to addressing issues with the following:

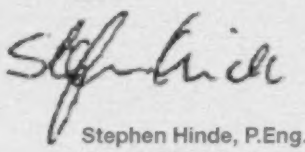
- CSA Z462 Workplace Electrical Safety, *Private Investigators and Security Agencies Act* and the *BC Electrical Safety Regulation*
- Development of metering options for residential 400A services
- Review and adoption of 2012 Canadian Electrical Code.

Safety Manager's Discussion

In 2011, we continued to shift our inspection focus to higher risk work. Physical assessments were performed on fewer inspection requests than 2010, but the number of non-compliances found was higher. In 2012 we continue to focus on higher risk work.

The greatest number of technical non-compliances was identified to be associated with equipment approvals (402 or approximately 7% of all identified non-compliances). While counterfeit product is a factor in unapproved equipment use, the global economy is producing equipment that may be approved to an international standard that is not recognized in Canada. We expect that this trend will continue to challenge our oversight activities in the years to come.

2012 will see the adoption of the latest version of the Canadian Electrical Code, Part 1. There are about 300 changes from the previous edition, a large number of them related to work to harmonize the Canadian code with international standards. This is part of ongoing work at the national level to improve compatibility of product in the international market place, and to provide standards for emerging technologies, such as electric vehicles.



Stephen Hinde, P.Eng.
Electrical Safety Manager

In the Elevating Devices Safety Program at the BC Safety Authority, we are responsible for overseeing the safety of elevators, escalators, moving walkways, dumbwaiters, lifts and construction hoists in accordance with the *Safety Standards Act* and the *Elevating Devices Safety Regulation*.

Incidents

The following summarizes incidents reported to the BC Safety Authority involving Elevating Devices.

FIGURE 27:
Elevating Incident Reports 2007-2011

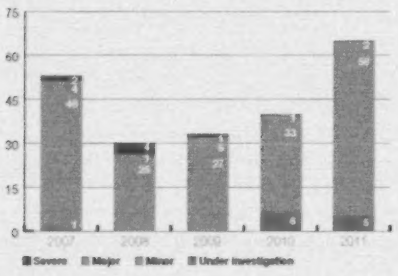


TABLE 21:
Elevating Major Incidents 2011

RATING	DESCRIPTION
Major	An individual fell while riding an escalator, resulting with two cuts caused by contact with the step. The person was transported to hospital for medical treatment.
	An individual, suspected of being intoxicated, attempted to walk on the handrail of a stopped escalator and fell approximately 25 feet to the concrete floor.

The two major incidents reported to the BC Safety Authority are identified above. Of the 58 *MINOR* incidents, most were slips, trips and falls on escalators. There were a few minor incidents where the elevating device did not align properly with the floor or the doors closed on an individual or failed to open. There is a notable increase in the number of *MINOR* incidents reported and this is considered to be a direct result of efforts to improve incident reporting that Elevating conducted in 2011.

Injuries

Injuries reported as a result of Elevating Device incidents in 2011 are summarized below in Figure 28.

FIGURE 28:
Elevating Injuries Reported 2007-2011

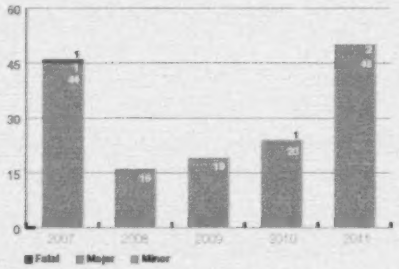


TABLE 22:
Elevating Major Injuries Reported in 2011

RATING	DESCRIPTION
Major	Elevating device was not level with the floor. An individual tripped on the uneven surface and suffered a broken hip.
	A child put its hand under the stainless steel elevator door as it was closing, resulting in a serious laceration. The child required surgery to treat the injury.

The two major injuries reported to the BC Safety Authority in 2011 are identified above. Of the 48 *MINOR* injuries, most were lacerations and bruises resulting from falls on escalators. There is a notable increase in the number of *MINOR* injuries reported and this is believed to be a direct result of efforts to improve incident reporting in 2011.

Assessments of Regulated Work

Elevating Safety Officers assess new installations as well as operating devices as part of regular maintenance. Non-compliances are recorded when the physical assessment of work determines that it does not conform to the applicable regulation.

FIGURE 29: Elevating Installation Permits

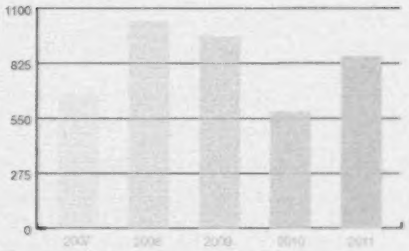


FIGURE 30: Elevating Operating Permits

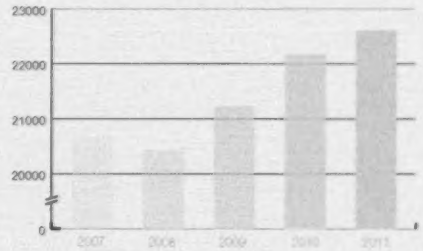


FIGURE 31: Elevating Physical Assessments

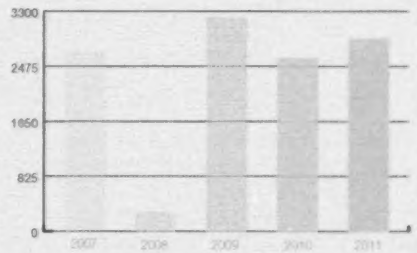
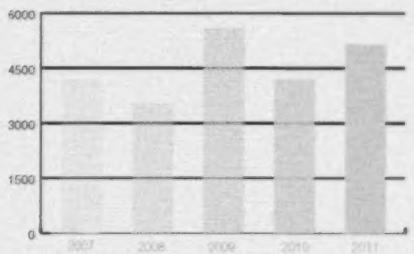


FIGURE 32: Elevating Non-Compliances



Assessment of operating or in-service units was the continued focus of Safety Officers. More than 40% of all inspections performed were on existing elevators, and focused on the high risk occupancy buildings such as hospitals. From the assessment of operating units, we found that mandatory maintenance requirements as required by regulation were not consistently performed due to lack of awareness and understanding by owners, contractors and maintenance personnel.

Managing Elevating Safety Risks

Compliance Orders, Monetary Penalties and Disciplinary Actions

Enforcement actions taken by the BC Safety Authority are compliance orders, monetary penalties and disciplinary actions. Definitions can be found in Appendix B. In 2011, five compliance orders were issued in the Elevating Devices sector. Details of each compliance order issued in 2011 are included in Appendix B.

TABLE 23:
Enforcement Actions Taken in Elevating Devices in 2011

ACTION	CATEGORY	QTY. ISSUED
Compliance Order	Provide Records	1
	No Permit	1
	Outstanding non-compliance(s)	3

Licensing and Certification

The BC Safety Authority verifies that elevators are installed, operated and maintained by qualified and knowledgeable professionals. The following licences and certifications were issued to individuals that demonstrated the required capabilities to produce safe work with elevating devices.

TABLE 24:
Licences and Certificates of Qualification issued in Elevating – 2011

TYPE	DOCUMENT	QTY. ISSUED
Licence	Contractor Licence	1
Certificate of Qualification	Car & Switch Operator	27
	Personnel Hoist & Construction Elevator Operator	67
	Construction Elevator Operator	53

Media Releases

The BC Safety Authority issued four quarterly media releases in 2011, announcing enforcement actions taken in all regulated industry sectors including elevating devices. An additional media release was issued as part of the BC Safety Authority's support for the Elevator Escalator Safety Foundation of Canada's Safe-T Rider program (http://www.safetrider.org/), encouraging safe elevator and escalator riding practices at early ages.

Regulatory Instruments and Amendments

The BC Safety Authority issues safety orders, directives and information bulletins to stop unsafe activity and provide clarification of regulatory requirements and interpretations. Additional details can be found in Appendix C or at www.safetyauthority.ca. There were no amendments to the Elevating Devices Safety Regulation in 2011.

TABLE 25:
Regulatory Instruments Issued in Elevating – 2011

TYPE	DOC N°.	TITLE
Safety Order	SO-L1 110225 4	Driving Machine Brake – Electric Elevators
Directive	D-L4 110303 1	Ventilation of Hydraulic Machine Rooms for Lifts for Persons with Physical Disabilities
	D-L4 110303 2	Periodic Tests Declarations
	D-L4 110303 3	Completion of Non-Compliances
	D-L4 110303 4	Installation of Glass or Mirrors on Lifts for Persons with Physical Disabilities
	D-L4 110803 5	Major and Minor Alterations
Bulletin	B-L4 110225 3	Driving Machine Brake – Electric Elevators
	B-L4 110413 2	Firefighters Emergency Operations (FEO) Requirements
	B-L4 110803 4	Elevating Devices Internal Cab Modernization

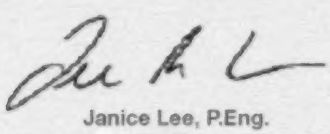
Stakeholder Engagement Program

The Elevating Devices Technical Advisory Committee met twice in 2011 to discuss industry issues of common concern and opportunity. In 2011, there were three Risk Reduction Working Groups in Elevating, dedicated to addressing the following issues:

- Elevator Mechanic Certification
- Emergency Operations
- Lifts for Persons with Disabilities

Safety Manager's Discussion

There have been a number of incidents involving elevating devices mechanics over the past several years including a fatality. At present, there are no uniform standards for the certification of approximately 1,000 people working as elevating devices mechanics in BC. As part of the continued development of the Elevator Mechanic Certification Program, 14 in person consultation sessions, with approximately 400 out of 1,000 individuals in the Industry, were held around the province. A Stakeholder Panel was formed to provide solutions to address the feedback and implementation is scheduled for 2013.



Janice Lee, P.Eng.
Elevating Devices Safety Manager

In the Gas Safety Program at the BC Safety Authority, we are responsible for overseeing industrial and commercial use of natural gas, propane, digester gas, manufactured gas, liquefied petroleum gas, landfill gas and hydrogen throughout British Columbia in accordance with the *Safety Standards Act* and the *Gas Safety Regulation*. We are responsible for delivering gas safety services for approximately 1.2 million homes in the province. Municipalities that have retained oversight of low pressure gas systems and work are identified in Appendix A.

Incidents

The following summarizes incidents reported to the BC Safety Authority involving regulated gas equipment.

FIGURE 33:
Gas Incident Reports 2007-2011

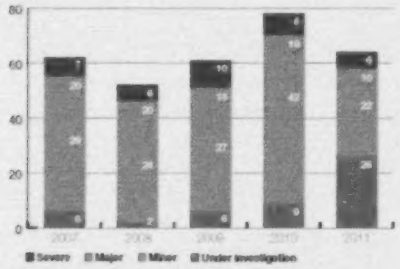


TABLE 26:
Gas Severe and Major Incidents 2011

RATING	QTY.	DESCRIPTION
Severe	4	Fires and/or explosions where Gas equipment was suspected to have caused the incident.
	1	Hazardous carbon monoxide levels discovered at a commercial warehouse.
	1	Near miss – gas leak that could have resulted with severe incident.
Major	6	Fires and/or explosions where Gas equipment was suspected to have caused the incident.
	1	Hazardous carbon monoxide levels discovered at a residence. Residents reported carbon monoxide poisoning symptoms.
	3	Near miss – underground gas line damaged while excavating or working.

The *SEVERE* and *MAJOR* incidents reported to the BC Safety Authority are summarized on the left. Of the 22 *MINOR* incidents, most were small fires or explosions where gas equipment was suspected to have caused the incident. *MINOR* incidents also included a number of cases where gas lines were contacted or damaged while working or excavating. Poorly installed or maintained equipment was reported with some cases of elevated carbon monoxide levels or gas smells resulting.

Injuries

Injuries reported as a result of Gas incidents in 2011 are summarized below in Figure 34.

FIGURE 34:
Gas Injuries Reported 2007-2011

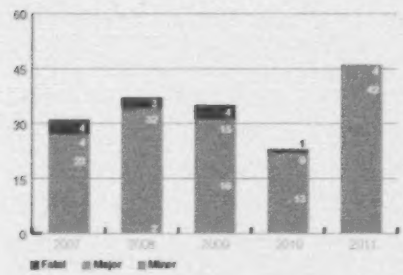


TABLE 27:
Gas Major Injuries Reported in 2011

RATING	QTY.	DESCRIPTION
Major	3	Carbon monoxide (CO) poisoning. Inadequate furnace maintenance resulted with a residential CO alarm being triggered and two occupants reporting symptoms of CO poisoning. One worker was sent for medical attention after elevated CO levels were discovered during a response to a report of gas odour being detected at a commercial warehouse.
	1	Two workers were injured when they attempted to ignite portable propane heaters in the presence of a gas odour. The workers suffered serious burns and unspecified injuries following the gas explosion.

The *MAJOR* injuries reported to the BC Safety Authority are identified on the left. *MINOR* injuries included burns and smoke inhalation from fires or explosions as well as nausea from gas inhalation and carbon monoxide poisoning side effects.

Assessments of Regulated Work

Gas Safety Officers assess new installations as well as operating equipment as part of regular maintenance. Non-compliances are recorded when work does not conform to the applicable regulation.

FIGURE 35:
Gas Installation Permits

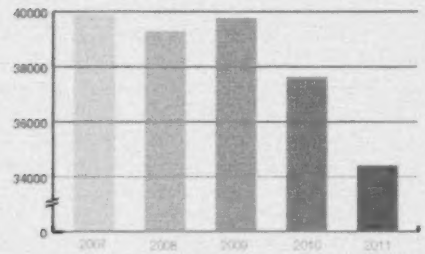


FIGURE 36:
Gas Operating Permits

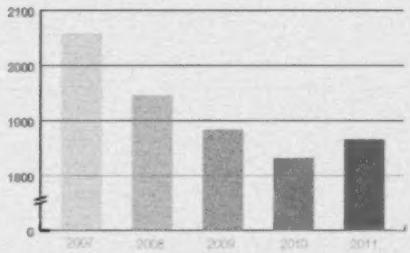


FIGURE 37:
Gas Physical Assessments

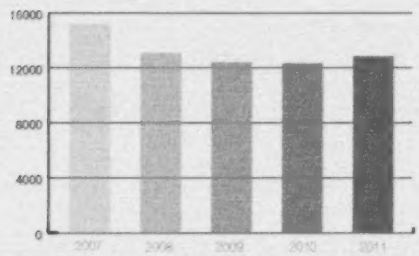
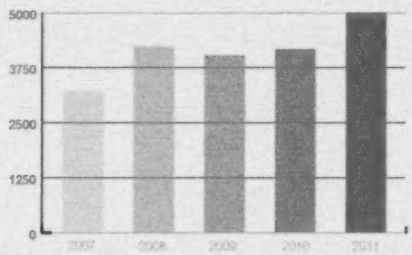


FIGURE 38:
Gas Non-Compliances



We continue to focus our gas assessment activities on higher-risk installations and facilities, resulting with a steady rise in non-compliances found. Many identified non-compliances relate to interpretation of manufacturer's certified installation instructions, or conflicts between these instructions and adopted codes or standards. We work to resolve these issues in collaboration with the approval agencies and other provincial regulators. In some cases, a directive is issued to clarify provincial requirements.

Tech Talks and Town Hall Meetings

The BC Safety Authority conducted three Gas Tech Talks throughout the province in 2011 covering one topic and reaching 152 stakeholders. Further details regarding the content of each Tech Talk are included in Appendix F.

TABLE 28:
Gas Tech Talks Conducted in 2011

TITLE/TOPIC	QTY. OF PARTICIPANTS
2010 Gas Code Changes	152

Enforcement Actions

In 2011, 54 compliance orders and six monetary penalties were issued with one disciplinary action taken in the Gas sector. Details of each compliance order, monetary penalty and disciplinary action are included in Appendix B.

TABLE 29:
Gas Enforcement Actions Taken in 2011

ACTION	CATEGORY	QTY. ISSUED
Compliance Order	Failure to Take Regulated Safety Precautions	6
	Performing work beyond scope of qualifications	1
	No Licence	11
	No Permit	22
	Expired Licence	1
	No Qualification	2
	Sale of Uncertified Equipment	2
	Outstanding Non-Compliance(s)	2
	Use of Unqualified Workers	3
	Provide Records	1
Monetary Penalty	Failure to Take Regulated Safety Precautions	1
	No Licence	3
	Provide Records	1
Disciplinary Action	Suspension of a Certificate of Qualification	1
	Suspension of a Contractor Licence	1

Licensing and Certification

The BC Safety Authority verifies that Gas equipment is installed, operated and maintained by qualified and knowledgeable professionals. In 2011, 216 Gas contractor licences and 1,071 Gas certificates of qualification were issued to individuals that demonstrated the minimum required capabilities to produce safe work.

TABLE 30:
Gas Licences and Certificates of Qualification Issued in 2011

TYPE	DOCUMENT	QTY. ISSUED
Licence	Contractor Licence	216
Certificate of Qualification	Class A Gas Fitter	57
	Class A Gas Fitter - Electrical Endorsement	1
	Class B Gas Fitter	358
	Class B Gas Fitter - Electrical Endorsement	7
	Class B Gas Fitter - Apprentice	349
	Class B Gas Fitter - 120KW	37
	Class B Gas Fitter - 120KW Apprentice	74
	CNG Automotive Technician	28
	LPG Automotive Technician	22
	CNG/LPG Automotive Technician	5
	Gas Appliance Service Technician	77
	Gas Venting Technician	1
	LPG Automotive Technician	10
	RV Gas Equipment Service Person	18
	Special Purpose Gas Certificate	27

Targeted Incident Reduction

A Targeted Incident Reduction (TIR) initiative was piloted in 2011 that focused on generating awareness regarding the hazards associated with carbon monoxide (CO) poisoning and how to reduce the risk of exposure to CO. In 2011, TIR activities focused on delivering awareness messages directly to members of the public as well as engaging media and other organizations to deliver information. Through this effort, BC Safety Authority carbon monoxide poisoning prevention messages reached out to over 500,000 British Columbians. Further details can be obtained through the BC Safety Authority's report titled *Targeted Incident Reduction – Carbon Monoxide Poisoning*.

Stakeholder Engagement Program

The Gas Technical Advisory Committee met three times in 2011 to discuss industry issues of common concern and opportunity. In 2011, there were four Risk Reduction Working Groups in Gas dedicated to addressing issues with the following:

- Gas Regulation Review
- Non-refillable Cylinders Risk Reduction Working Group
- Gas Contractor Licensing Review
- Terms & Conditions for a Gas Utility Operating Permit

Regulatory Instruments and Amendments

The BC Safety Authority issues safety orders, directives and information bulletins to stop unsafe activity and provide clarification of regulatory requirements and interpretations. Additional details can be found in Appendix C or at www.safetyauthority.ca.

TABLE 31:
Gas Regulatory Instruments Issued in 2011

TYPE	DOC N°	TITLE
Directive	D-G5 070628 5 Revision 02	(Revised) Plastic Venting
	D-GA 2011-01	B149.1 & .2 Interpretation, Application and Operation
Bulletin	B-G5 110401 1	Gas Equipment/Product Approval Application Function Disabled Via BC Online and Service BC
	B-G5 110816 2	Adoption of the 2010 Editions of the CSA B149 Codes
	N/A	Clothes Dryer Appliance & Venting Maintenance

The *Gas Safety Regulation* was amended in 2011, adopting the following Canadian Standards Association (CSA) codes:

- CAN/CSA-B149.1-10 Natural Gas and Propane Installation Code
- CAN/CSA-B149.2-10 Propane Storage and Handling Code
- CAN/CSA-B149.3-10 Code of the Field Approval of Fuel-Related Components on Appliances and Equipment
- CAN/CSA-B149.5-10 Installation Code for Propane Fuel Systems and Tanks on Highway Vehicles
- CSA-B109-01 Natural Gas for Vehicles Installation Code
- CAN/CSA-Z662-07 Oil and Gas Pipeline Systems
- CAN/CGA-B105-M93 Code for Digester Gas and Landfill Gas Installations
- CSA B214-07 Installation Code for Hydronic Heating Systems (specified clauses only – see information bulletin)

Media Releases

The BC Safety Authority issued 14 media releases in 2011 related to Gas safety. A listing of these can be found in Appendix E.

TABLE 32:
Gas Related Media Releases – 2011.

N° OF RELEASES	DESCRIPTION
4	Quarterly releases announcing enforcement actions taken in all regulated industry sectors including Gas
5	Provided information for proper maintenance of home and recreational gas equipment
2	Carbon monoxide awareness
2	Safe digging practices around underground gas lines
1	Hazards created by home renovations if the work is not conducted with the proper permits in place

Safety Manager's Discussion

While continuing to support the more traditional aspects of the gas industry in the province through assessment, education, and enforcement, the Gas Safety Program is also providing technical support and guidance to emerging technologies within our jurisdiction, and working collaboratively with other regulators across the country on technological development. Renewed interest in natural gas as an engine fuel, especially in the heavy transportation sector, is creating new opportunities for equipment manufacturers, installation technicians, and transport companies. Locally-developed technology which stores natural gas motor fuel as a liquid, is attracting international attention. We are involved in design approval and assessment of the required fuelling infrastructure, as well as the approval of the vehicle natural gas fuel systems. Propane is also re-establishing itself as a desirable motor fuel, and we are in the process of reworking our Propane Conversion Certificate of Qualification (CQ) exam and syllabus to reflect technological changes within this sector. Other provincial regulators have expressed interest in adopting our format. Once the propane program has been completed, the same process will be utilized for the Natural Gas Conversion CQ program.

The biogas sector continues to develop, with ongoing projects to utilize methane from wastewater treatment plants, landfills, and agricultural facilities for energy production through power generation, or vehicle fuel as renewable natural gas. We are working closely with stakeholders and regulators to ensure regulatory requirements keep pace with, and recognize technological changes within the industry.

We also provide significant support to national and international codes and standards development through CSA International and the Interprovincial Gas Advisory Council. We are members of a committee which is working towards the first jointly-developed Canadian and American standard for biogas production and utilization. As part of this project, we are also examining other international standards with a view towards further harmonization.

The expansion of the natural gas exploration and development industry in the northeast has presented additional opportunities for our involvement in the technology. We are in discussions with the Oil and Gas Commission regarding these opportunities, as well as exploring our roles in the development of Liquid Natural Gas export facilities being constructed in the northwest.

Eric Skehor
Gas Safety Manager

In the Passenger Ropeways Safety Program at the BC Safety Authority, we are responsible for overseeing the safety of passenger ropeways throughout British Columbia in accordance with the *Safety Standards Act* and the *Elevating Devices Safety Regulation*. Passenger ropeways include tramways, gondolas, chairlifts, rope tows and passenger conveyors.

Incidents

The following summarizes incidents reported to the BC Safety Authority involving passenger ropeway (PR) equipment.

FIGURE 39:
PR Incident Reports 2007-2011

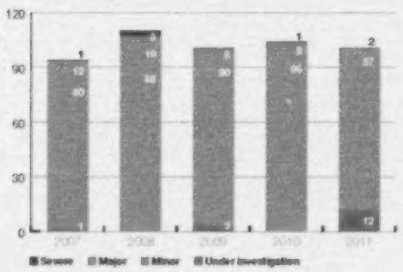


TABLE 33:
PR Major Incidents 2011

RATING	DESCRIPTION
Major	During the summer season, a passenger was struck by a chairlift passenger carrier while disembarking at the station. The passenger stopped walking before they had cleared the area, was hit by the chair on the back of the legs and fell onto their knees. It was reported that the person had fractured both of their knees as a result of the incident.
	An occupied chairlift passenger carrier slid backward down the haul rope into the carrier behind it. No injuries resulted. Operator investigation revealed that a nut in the locking mechanism was not properly tightened during maintenance.

The *MAJOR* incidents reported to the BC Safety Authority are summarized above. Of the 87 *MINOR* incidents, most were falls while loading or unloading from passenger carriers or equipment malfunctions. There were a significant number of falls from passenger carriers outside of the loading zones. A few instances of passengers being struck or caught by moving carriers were reported as well as a number of deropement instances.

Injuries

Injuries reported as a result of passenger ropeway incidents in 2011 are summarized below.

FIGURE 40:
PR Injuries Reported 2007-2011

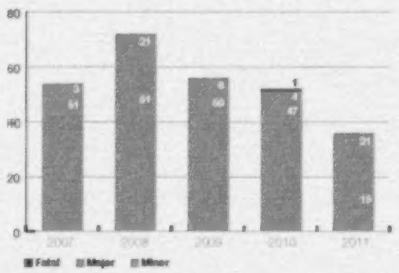


TABLE 34:
PR Major Injuries Reported in 2011

RATING	QTY.	DESCRIPTION
Major	10	Fractures and dislocations due to falls or unintentional contact with equipment
	8	Possible concussions, head or neck injuries due to falls or unintentional contact with equipment
	3	Soft tissue injuries from falls or unintentional contact with equipment

The *MAJOR* injuries reported to the BC Safety Authority are identified above. Of the 15 *MINOR* injuries, most were soft tissue damage (sprains, strains) or reports of lacerations, scrapes or bruising. Most minor injuries were a result of falls or unintentional contact with moving equipment.

Assessments of Regulated Work

Passenger Ropeway Safety Officers assess new installations as well as operating equipment as part of regular maintenance. Non-compliances are recorded when work does not conform to the applicable regulation.

FIGURE 41: PR Installation Permits

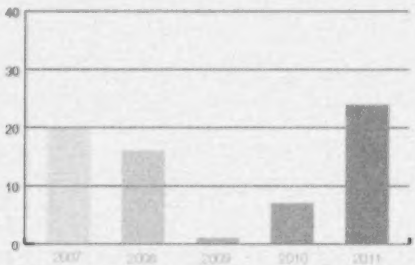


FIGURE 42: PR Operating Permits

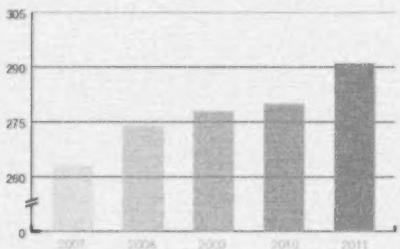


FIGURE 43: PR Physical Assessments

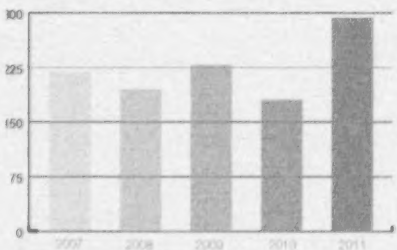
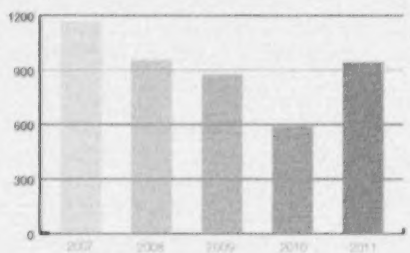


FIGURE 44: PR Non-Compliances



Passenger ropeway installation permit applications increased significantly in 2011. Of those install permits 10 were for new installations and 14 were for major or minor modifications to existing passenger ropeways. Increased inspection activity can be partially attributed to this increase in permit assessments in 2011. Of the non-compliances found during inspection activity, approximately 10% were related to operational requirements and 6% related to technical documentation required for new or modified installations.

Managing Passenger Ropeways Safety Risks

Licensing and Certification

The BC Safety Authority verifies that passenger ropeway equipment is installed, operated and maintained by qualified and knowledgeable professionals. In 2011, three passenger ropeway licences and three certificates of qualification were issued to individuals that demonstrated the minimum required capabilities to produce safe work.

TABLE 35:
PR Licences and Certificates of Qualification Issued in 2011

TYPE	DOCUMENT	QTY. ISSUED
Licence	Contractor Licence	4
Certificate of Qualification	PRTC - Fixed Grip	2
	PRTD Surface RW	1

Regulatory Instruments and Amendments

The BC Safety Authority issues safety orders, directives and information bulletins to stop unsafe activity and provide clarification of regulatory requirements and interpretations. Additional details can be found in Appendix C or at www.safetyauthority.ca.

TABLE 36:
PR Regulatory Instruments Issued in 2011

TYPE	DOC N°.	TITLE
Safety Order	SO-P4 110531 1	Passenger Ropeway Foot Passenger Loading Areas
	SO-P4 110621 2	Leitner Poma "X-Y" Sheave Assembly Axle Adjustment Bolts

There is no Safety Regulation in BC specific to Passenger Ropeways. Passenger Ropeways regulatory requirements are captured in the *Elevating Devices Safety Regulation*. In 2011, there were no amendments to the *Elevating Devices Safety Regulation* that affect passenger ropeways.

Media Releases

The BC Safety Authority issued 5 media releases in 2011 related to passenger ropeway safety. Four were quarterly releases announcing enforcement actions taken in all regulated industry sectors including Passenger Ropeways. One was a release titled "Powder Patrol Goes High Tech" and is focused on raising public awareness about how to prevent falls from chairlifts. The BCSA offers the following guidance:

- Reading safety and instructional signs and following the directions they provide before riding any chairlift.
- Not bouncing, turning around, reaching out or trying to make equipment adjustments while riding chairlifts.
- Keeping your restraining bar down until instructed to lift it by safety signage or lift operators.

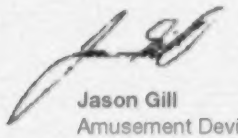
The release also brings awareness to on-mountain safe riding events that the Authority was hosting plus an interactive game (www.safetyauthority.ca/i-ride-safe) that was developed by the BC Safety Authority to encourage youth safe ropeway riding practices.

Stakeholder Engagement Program

The Passenger Ropeways Technical Advisory Committee met two times in 2011 to discuss common industry challenges and opportunities. In 2011, there was one Passenger Ropeways Risk Reduction Working Groups evaluating a *Proactive Approach to Aging Equipment*.

Safety Manager's Discussion

New installations were a primary focus for the Passenger Ropeways technology in 2011. This included several passenger conveyor installations that were significantly longer than those previously installed in the province such as one that is 198 meters long with a capacity of 1,500 people per hour. Some of these conveyor installations incorporated enclosures along their entire length which posed new safety considerations like emergency exit doors and the anchoring of these enclosure systems. Another cable crane passenger ropeway was also installed in the province in 2011 to be used in the construction of an independent power project. These ropeways are a new type of installation in the province and are being regulated under alternative approaches as they are not precisely classified in the current national standard.



Jason Gill
Amusement Devices and Passenger Ropeways
Safety Manager

In the Railway Safety program at the BC Safety Authority, we regulate railways that operate solely within British Columbia and have a Minister's Certificate issued by the BC Ministry of Transportation and Infrastructure. Provincial Railways are subject to the *British Columbia Railway Act*, *Railway Safety Act* and adopted Federal railway safety legislation. In the Railway Safety program, we regulate four classes of railways: Common Carrier, Industrial, Commuter and Heritage Railways.

Accidents and Incidents

Railways, accidents and incidents are reported in accordance with adopted federal regulations. The following summarizes accidents and incidents reported to the BC Safety Authority involving Railway equipment.

FIGURE 45:
Railway Accident and Incidents

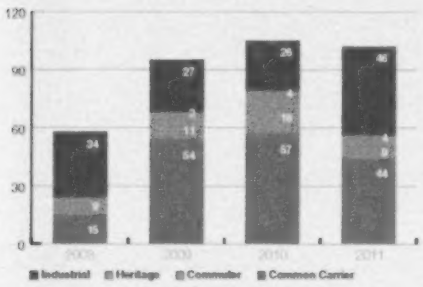


Figure 45, data includes numbers associated with suicides on railway property, but does not include non-operational injuries associated with slips, falls and medical emergencies. Increased values in years 2010 and 2011 can be attributed to education and enforcement associated with reporting requirements.

Further insight into railway accidents and incidents occurring in 2011 can be obtained from Table 37 below.

Injuries

Provincial railways are required to report injuries that are a result of railway operations to the BCSA. This includes injuries to workers performing train operations or injuries to the public on railway property as a result of train operations.

FIGURE 46:
Railway Injuries Reported 2011

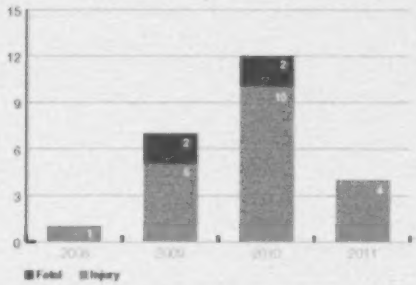


Figure 46 data does not include numbers associated with suicides. There were no fatal injuries reported in 2011. The four reported injuries were a result of rules violations and vehicle/train encounter at a public crossing.

Assessments of Regulated Work

Railway Safety Officers assess and audit all operating railways as part of regular oversight. Assessments may result with non-compliances where the railway is found to not comply with the applicable Acts and Regulations. Railway operations are also audited against their Safety Management Systems, which are required for all railways and the Railway Safety Program issues recommendations as a result of these audits.

FIGURE 47: Operating Railways 2008 - 2011

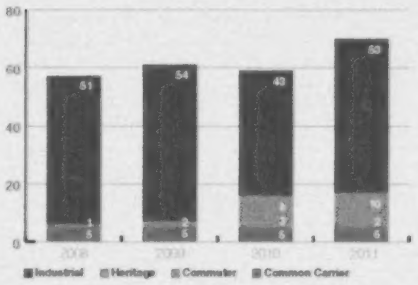


FIGURE 48: Assessments & Non-Compliances 2008 - 2011

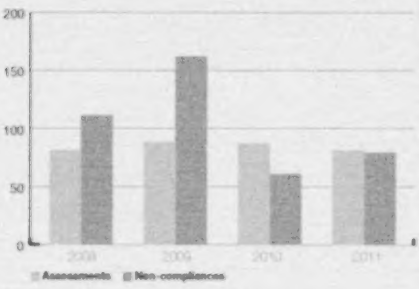
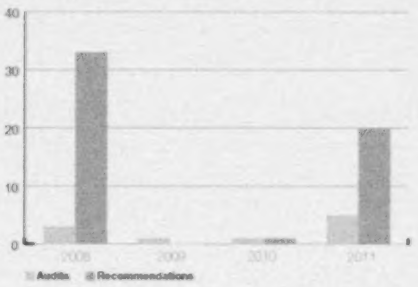


FIGURE 49: Audits & Recommendations 2008 - 2011



As a result of risks identified in an Audit performed in the fall of 2011, the Railway Safety Program will now modify its current Industrial Railway policy to include railway activities on Sidings and Spurs.

TABLE 37:
Summary of 2011 Railway Accidents and Incidents Types.

2011 RAILWAY ACCIDENTS/INCIDENTS					
ACCIDENT/ INCIDENTS	COMMON CARRIER	HERITAGE RAILWAY	INDUSTRIAL RAILWAY	COMMUTER	TOTAL 2011
Crossings	7	0	0	0	7
Collisions	3	2	6	0	11
Rules Violations	15	4	18	3	40
Involving Dangerous Goods	3	0	11	0	14
Derailments	29	0	35	3	67

Note: Chart represents multiple variables. For example Crossing Accident can also result in a derailment.

Managing Railway Safety Risks

Tech Talks and Town Hall Meetings

The Railway program conducted three town hall meetings in 2011, reaching 35 industry stakeholders. These annual meetings are held with industry to share program learnings and to deliver education in an open and transparent forum. The agenda items discussed during the 2011 meetings were as follows:

- A Year-End Review
- Annual Railway Safety Statistics
- Update on the Railway Administrative Agreement
- Education Programs available to Railway clients
  - Safe Rider
  - R.E.S.P.E.C.T. Railway Education Safety Program: Examining Crossings and Trespassing
  - Consultant Training Opportunities
- Review of Railway Fees
- Update on BCSA Regulatory Guidelines
- 2012 - What's Coming in the New Year
  - Focus on Safety Management Systems (SMS)

Enforcement

In the Railway Safety Program, enforcement is achieved through non-compliance and recommendation resolution. BCSA manages all non-compliances issued to closure, which is achieved when the recipient railway has submitted sufficient proof to the BC Safety Authority to demonstrate resolution of the issue. Audit recommendations are required to be responded to as part of closing the audit from which the recommendation resulted.

FIGURE 50:
Railway Enforcement Actions Taken 2008 - 2011

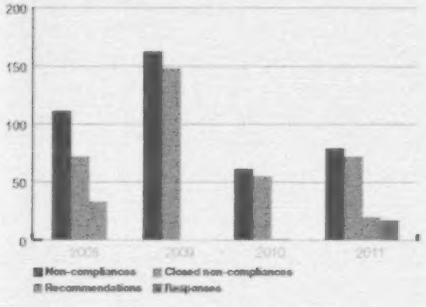


Figure 50, all open unresolved non-compliances are a result of the following conditions: the Railway has ceased operations or the non-compliance has been referred to the Ministry of Transportation and Infrastructure for decision.

Media Releases

The BC Safety Authority issued one media release in 2011 related to railway safety titled: *If It Came Down to You Versus Train, Who Do You Think Would Win?* This media release was issued as part of the *Safe Rider* program developed in an effort to generate awareness of typical hazards that face public riders of commuter railways:

- Respect the Edge – stay behind the yellow line
- Don't Rush – there's another train on the way
- Hang On – prevent falling inside the train
- No Wheels on Escalators – if it has wheels use the elevator.

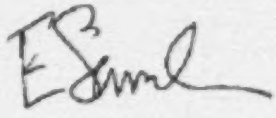
The safe rider program was designed to focus on typical Commuter Railway incidents that are reported to the BC Safety Authority each year.

Stakeholder Engagement Program

The Railway team officially met with industry stakeholders three times in 2011 to discuss industry issues, challenges and opportunities. These stakeholder engagement discussions occur as part of the Railway Town Hall meetings described above.

Safety Manager's Discussion

The Railway Safety Program will continue to focus its assessments and audits to high-risk activities occurring on provincial railways. This will be supported with targeted education and continual efforts to ensure all railways operating within the province are captured under the BCSA's regulatory safety program. An example of targeted education is the work being performed by Railway Safety Officers to deliver the BCSA *R.E.S.P.E.C.T.* program which addresses railway crossing and trespassing safety issues.



Eric Samuelson
Railway Safety Manager

Appendix A

Municipalities That Have Retained Administration Responsibilities of the *Safety Standards Act*

The Province of British Columbia has entered into agreements with authorities other than BC Safety Authority to administer portions of the *Safety Standards Act*.

Municipalities that administer the *Electrical Safety Regulation*

- City of Burnaby
- City of North Vancouver
- City of Surrey
- City of Vancouver
- City of Victoria
- Corporation of the District of Maple Ridge
- District of North Vancouver
- Municipality of West Vancouver

Municipalities that administer the *Gas Safety Regulation*

- City of Burnaby
- City of Kelowna
- City of North Vancouver
- City of Richmond
- City of Vancouver
- Corporation of the District of Maple Ridge
- District of North Vancouver

The above municipalities administer gas assessment programs for detached dwellings with gas services at a pressure of 14.0 kPa gauge or less as well as other buildings with gas services at a pressure of 14.0 kPa gauge or less with a total connected load for the meter of 120 kW or less.

Appendix B1

Enforcement Actions – Compliance Orders Issued in 2011

A compliance order is an enforcement document issued to a person by the BC Safety Authority that specifies actions to be taken, stopped or modified where, in the opinion of the BC Safety Authority, there exists a risk of personal injury or damage to property associated with work or products regulated by the *Safety Standards Act*. The following compliance orders were issued in 2011.

Notes:

- **The BC Safety Authority is subject to the *Freedom of Information and Protection of Privacy Act*. Provincial legislation restricts the information that may be published with respect to individuals. Accordingly, the BC Safety Authority may provide descriptions of enforcement actions taken against individuals but will only identify corporate entities by name.**
- **dba represents "doing business as" and O/A represents "operated as"**

Amusement Devices

COMPLIANCE ORDER N°.	ISSUED TO	DUTY HOLDER HAS LICENCE OR BCSA QUALIFICATION	CATEGORY	DESCRIPTION
CO-2011-0089	An Individual	Yes	Unsafe use of regulated equipment	An assessment found the duty holder operating a regulated product (inflatable amusement device) in an unsafe condition and without the required permit. The duty holder was ordered to assemble regulated equipment in accordance with manufacturer's instructions, register all regulated product with BCSA, and obtain a permit for each regulated product.
CO-2011-0126	A Company	No	Outstanding non-compliance(s)	An assessment found regulated products in operation without permits and other non-compliances. They duty holder was ordered to cease operation of the regulated equipment, comply with the Safety Standards Act and associated regulations, make application and obtain a contractor's licence, submit the 'Amusement Device Specifications Submission' and submit correction of non-compliance.

Boilers, Pressure Vessels, Refrigeration

COMPLIANCE ORDER N°.	ISSUED TO	DUTY HOLDER HAS LICENCE OR BCSA QUALIFICATION	CATEGORY	DESCRIPTION
CO-2011-0174	COEX HEATING AND SHEET METAL LTD	Yes	Expired Licence	An assessment determined that regulated work had been performed by the duty holder without a valid licence. The duty holder was ordered to stop performing regulated work for others unless evidence of a valid license can be demonstrated.

Electrical

COMPLIANCE ORDER N°.	ISSUED TO	DUTY HOLDER HAS LICENCE OR BCSA QUALIFICATION	CATEGORY	DESCRIPTION
CO-2011-0001	J M P ELECTRICAL CONTRACTORS LTD.	Yes	Performing work beyond scope of qualifications	An assessment determined that regulated work had been performed beyond the scope of the duty holder's qualifications. The duty holder was ordered to stop performing regulated work unless the work can be demonstrated to be within the scope of the particular qualification.
CO-2011-0003	An Individual	No	No Licence	An assessment determined that regulated work had been completed without the required licence. The duty holder was ordered to stop performing regulated work for others.
CO-2011-0002	ANCHOR DOOR SERVICES (KELOWNA) LTD.	Yes	Expired Licence	An assessment determined that regulated work had been performed without a valid Licence. The duty holder was ordered to stop performing regulated work for others unless evidence of a valid licence can be demonstrated.

Appendix B1

Enforcement Actions – Compliance Orders Issued in 2011

Electrical Continued

COMPLIANCE ORDER Nº.	ISSUED TO	DUTY HOLDER HAS LICENCE OR BCSA QUALIFICATION	CATEGORY	DESCRIPTION
CO-2011-0008	540799 B.C. LTD. and/or UNITED AWNING & SIGNS	No	No Licence	An assessment determined that regulated work had been performed without the required licence. The duty holder was ordered to stop performing regulated work for others.
CO-2011-0009	An Individual	Yes	No Permit	An assessment determined that regulated work had been performed without the required permit. The duty holder was ordered to stop performing work without a permit where a permit is required.
CO-2011-0012	JAY-WIRE ELECTRICAL SERVICE INC.	Yes	Expired Permit	An assessment determined several expired permits. No response was received from safety officer attempts at notification regarding this matter. The duty holder was ordered to perform an inspection of the work and submit a declaration of compliance for each installation.
CO-2011-0013	An Individual	No	No Licence	An assessment determined that regulated work had been performed without the required licence. The duty holder was ordered to stop performing regulated work for others.
CO-2011-0014	MARATHON ELECTRIC LTD.	Yes	No Permit	An assessment determined that regulated work had been performed without the required permit. The duty holder was ordered to stop performing regulated work without a permit where a permit is required.
CO-2011-0016	955940 ALBERTA LTD. O/A BOLT SECURITY SYSTEMS OKANAGAN	Yes	No Permit	An assessment determined that regulated work had been performed without the required permit. The duty holder was ordered to stop performing regulated work without a permit where a permit is required.
CO-2011-0025	PROTECH HEATING AND AIR CONDITIONING LTD.	No	No Licence	An assessment determined that regulated work had been performed without the required licence. The duty holder was ordered to stop performing regulated work for others.
CO-2011-0032	An Individual	No	No permit	An assessment found regulated work performed without a permit. The duty holder was ordered to maintain a record of permits obtained where work was performed that required a permit.
CO-2011-0031	BEYOND AUDIO INC.	Yes	No Permit	An assessment determined that regulated work had been performed without the required permit. The duty holder was ordered to stop performing regulated work without a permit where a permit is required.
CO-2011-0033	A D T SECURITY SERVICES CANADA INC.	Yes	No Permit	An assessment determined that regulated work had been performed without the required permit. The duty holder was ordered to stop performing regulated work without a permit where a permit is required.
CO-2011-0034	An Individual	Yes	Expired Permit	An assessment determined an expired permit. No response was received from safety officer attempts at notification regarding this matter. The duty holder was ordered to make arrangements for a safety officer inspection or obtain the services of a licensed contractor for the purpose of completing the work.
CO-2011-0035	A Company	No	No permit	An assessment determined that regulated work had been performed without the required permit. The duty holder was ordered to provide a list of installations where regulated work had been performed in order to determine if permits had been obtained for the work.
CO-2011-0040	An Individual	No	No Licence	An assessment determined that regulated work had been performed without the required licence. The duty holder was ordered to stop performing regulated work for others.
CO-2011-0042	HOMEWORKS ENTERTAINMENT LTD.	Yes	Expired Permit	An assessment determined an expired permit. No response was received from safety officer attempts at notification regarding this matter. The duty holder was ordered to perform an inspection of the work and to submit a declaration of compliance.

Appendix B1

Enforcement Actions – Compliance Orders Issued in 2011

Electrical Continued

COMPLIANCE ORDER N°.	ISSUED TO	DUTY HOLDER HAS LICENCE OR BCSA QUALIFICATION	CATEGORY	DESCRIPTION
CO-2011-0044	SAPPHIRE SOUND INC.	Yes	No Permit	An assessment determined that regulated work had been performed without the required permit. The duty holder was ordered to stop performing regulated work without a permit where a permit is required.
CO-2011-0047	An Individual	No	No Licence	An assessment determined that regulated work had been performed without the required licence. The duty holder was ordered to stop performing regulated work for others.
CO-2011-0046	J & A STEREO (2007) LTD.	No	No Licence	An assessment determined that regulated work had been performed without the required licence. The duty holder was ordered to stop performing regulated work for others.
CO-2011-0048	DICKSON SIGNS LTD.	Yes	No Permit	An assessment determined that regulated work had been performed without the required permit. The duty holder was ordered to stop performing regulated work without a permit where a permit is required.
CO-2011-0054	ACCESS LOGIC INC.	Yes	Expired Licence	An assessment determined that regulated work had been performed without a valid licence. The duty holder was ordered to stop performing regulated work for others unless evidence of a valid licence can be demonstrated.
CO-2011-0057	An Individual	Yes	No permit	An assessment determined that regulated work had been performed without the required permit. The duty holder was ordered to stop performing regulated work without a permit where a permit is required.
CO-2011-0058	UNIFIED SYSTEMS INC.	Yes	Expired Licence	An assessment determined that regulated work had been performed without a valid licence. The duty holder was ordered to stop performing regulated work for others unless evidence of a valid licence can be demonstrated.
CO-2011-0060	BRITECH HVAC LTD.	Yes	No permit	An assessment determined that regulated work had been performed without the required permit. The duty holder was ordered to stop performing regulated work without a permit where a permit is required.
CO-2011-0061	LTM EXCAVATING & CONTRACTING LTD.	No	No Licence	An assessment determined that regulated work had been performed without the required licence. The duty holder was ordered to stop performing regulated work for others.
CO-2011-0063	CLEANWAY SUPPLY INC.	No	No Licence	An assessment determined that regulated work had been performed without the required licence. The duty holder was ordered to stop performing regulated work for others.
CO-2011-0076	ACTION ELECTRIC LTD.	Yes	Expired Permit	An assessment determined several expired permits. No response was received from safety officer attempts at notification regarding this matter. The duty holder was ordered to perform an inspection of the work and submit a declaration of compliance for each installation.
CO-2011-0078	An Individual dba MODERN ELECTRIC LTD.	Yes	Expired Licence	An assessment determined that regulated work had been performed without a valid Licence. The duty holder was ordered to stop performing regulated work for others unless evidence of a valid licence can be demonstrated.
CO-2011-0077	G S G ELECTRIC LTD.	Yes	Expired Permit	An assessment determined several expired permits. No response was received from safety officer attempts at notification regarding this matter. The duty holder was ordered to perform an inspection of the work and submit a declaration of compliance for each installation.
CO-2011-0081	EATONS COMMERICAL & RESIDENTIAL SERVICES LTD.	No	No Licence	An assessment determined that regulated work had bee performed without the required licence. The duty holder was ordered to stop performing regulated work for others.
CO-2011-0088	CJ SECURITY & COMMUNICATION LTD.	Yes	No Permit	An assessment determined that regulated work had been performed without the required permit. The duty holder was ordered to stop performing regulated work without a permit where a permit is required.
CO-2011-0090	An Individual	Yes	No Permit	An assessment determined that regulated work had been performed without the required permit. The duty holder was ordered to stop performing regulated work without a permit where a permit is required.

Enforcement Actions – Compliance Orders Issued in 2011

Electrical Continued

COMPLIANCE ORDER Nº.	ISSUED TO	DUTY HOLDER HAS LICENCE OR BCSA QUALIFICATION	CATEGORY	DESCRIPTION
CO-2011-0094	An Individual	Yes	Expired Permit	An assessment determined an expired permit. No response was received from safety officer attempts at notification regarding this matter. The duty holder was ordered to make arrangements for a safety officer inspection or obtain the services of a licensed contractor for the purpose of completing the work.
CO-2011-0095	VANISLE SEPTIC SYSTEMS INC. and an Individual	No	No Licence	An assessment determined that regulated work had been performed without the required licence. The duty holder was ordered to stop performing regulated work for others.
CO-2011-0096	SMITHSCAPE LANDSCAPE CONSTRUCTION LTD. and an Individual	No	No Licence	An assessment determined that regulated work had been performed without the required licence. The duty holder was ordered to stop performing regulated work for others.
CO-2011-0099	MAZZEI ELECTRIC LTD.	Yes	No Permit	An assessment determined that regulated work had been performed without the required permit. The duty holder was ordered to stop performing regulated work without a permit where a permit is required.
CO-2011-0101	ALWAYS GREEN IRRIGATION & LANDSCAPING LTD. and an Individual	No	No Licence	An assessment determined that regulated work had been performed without the required licence. The duty holder was ordered to stop performing regulated work for others.
CO-2011-0100	GRANITE SECURITY SOLUTIONS INC. and an Individual	No	No Licence	An assessment determined that regulated work had been performed without the required licence. The duty holder was ordered to stop performing regulated work for others.
CO-2011-0108	An Individual	Yes	Expired Permit	An assessment determined an expired permit. No response was received from safety officer attempts at notification regarding this matter. The duty holder was ordered to make arrangements for a safety officer inspection or obtain the services of a licensed contractor for the purpose of completing the work.
CO-2011-0107	1408168 ONTARIO INC. dba SONITROL	Yes	No Permit	An assessment determined that regulated work had been performed without the required permit. The duty holder was ordered to stop performing regulated work without a permit where a permit is required.
CO-2011-0109	PALMIERI BROS. PAVING LTD.	No	No Licence	An assessment determined that regulated work had been performed without the required licence. The duty holder was ordered to stop performing regulated work for others.
CO-2011-0111	An Individual	No	No Licence	An assessment determined that regulated work had been performed without the required licence. The duty holder was ordered to stop performing regulated work for others.
CO-2011-0113	An Individual	No	No Licence	An assessment determined that regulated work had been performed without the required licence. The duty holder was ordered to stop performing regulated work for others.
CO-2011-0112	An Individual	No	No Licence	An assessment determined that regulated work had been performed without the required licence. The duty holder was ordered to stop performing regulated work for others.
CO-2011-0120	An Individual	No	No Licence	An assessment determined that regulated work had been performed without the required licence. The duty holder was ordered to stop performing regulated work for others.
CO-2011-0119	735284 BC LTD. DBA MITCHCO SECURITY SYSTEMS	Yes	No Permit	An assessment determined that regulated work had been performed without the required permit. The duty holder was ordered to stop performing regulated work without a permit where a permit is required.

Appendix B1

Enforcement Actions – Compliance Orders Issued in 2011

Electrical Continued

COMPLIANCE ORDER N°.	ISSUED TO	DUTY HOLDER HAS LICENCE OR BCSA QUALIFICATION	CATEGORY	DESCRIPTION
CO-2011-0122	An Individual	No	No Licence	An assessment determined that regulated work had been performed without the required licence. The duty holder was ordered to stop performing regulated work for others.
CO-2011-0121	An Individual	No	No Licence	An assessment determined that regulated work had been performed without the required licence. The duty holder was ordered to stop performing regulated work for others.
CO-2011-0124	An Individual and CANADIAN ELECTRICAL LTD	No	No Licence	An assessment determined that regulated work had been performed without the required licence. The duty holder was ordered to stop performing regulated work for others.
CO-2011-0125	An Individual and POWER PROS ELECTRICAL LTD.	Yes	Expired Permit	An assessment determined an expired permit. No response was received from safety officer attempts at notification regarding this matter. The duty holder was ordered to perform an inspection of the work and submit a declaration of compliance.
CO-2011-0127	An Individual	Yes	Expired Permit	An assessment determined an expired permit. No response was received from safety officer attempts at notification regarding this matter. The duty holder was ordered to perform an inspection of the work and submit a declaration of compliance.
CO-2011-0129	W.D.F. PROFESSIONAL SECURITY SERVICES LTD.	Yes	Expired Permit	An assessment determined an expired permit. No response was received from safety officer attempts at notification regarding this matter. The duty holder was ordered to perform an inspection of the work and submit a declaration of compliance.
CO-2011-0128	CORNERSTONE SECURITY SYSTEMS (2010) LTD.	Yes	Expired Permit	An assessment determined expired permits. No response was received from safety officer attempts at notification regarding this matter. The duty holder was ordered to perform an inspection of the work and submit a declaration of compliance for each installation.
CO-2011-0131	An Individual	No	No Licence	An assessment determined that regulated work had been performed without the required licence. The duty holder was ordered to stop performing regulated work for others.
CO-2011-0134	HOLLER ELECTRIC & APPLIANCES LTD.	Yes	No Permit	An assessment determined that regulated work had been performed without the required permit. The duty holder was ordered to stop performing regulated work without a permit where a permit is required.
CO-2011-0135	BANNER MAINTENANCE LTD. and an Individual	No	No Licence	An assessment determined that regulated work had been performed without the required licence. The duty holder was ordered to stop performing regulated work for others.
CO-2011-0136	An Individual	No	No Licence	An assessment determined that regulated work had been performed without the required licence. The duty holder was ordered to stop performing regulated work for others.
CO-2011-0139	An Individual dba MACK ELECTRICAL CONTRACTORS LTD.	Yes	Expired Licence	An assessment determined that regulated work had been performed without a valid Licence. The duty holder was ordered to stop performing regulated work unless evidence of a valid license can be demonstrated.
CO-2011-0140	DKR ELECTRICAL LTD.	Yes	Expired Permit	An assessment determined expired permits. No response was received from safety officer attempts at notification regarding this matter. The duty holder was ordered to perform an inspection of the work and submit a declaration of compliance for each installation.
CO-2011-0142	AGILE PROPERTY SERVICES LTD. and an Individual	No	No Licence	An assessment determined that regulated work had been performed without the required licence. The duty holder was ordered to stop performing regulated work for others.
CO-2011-0143	An Individual	No	No Licence	An assessment determined that regulated work had been performed without the required licence. The duty holder was ordered to stop performing regulated work for others.

Enforcement Actions – Compliance Orders Issued in 2011

Electrical Continued

COMPLIANCE ORDER Nº	ISSUED TO	DUTY HOLDER HAS LICENCE OR BCSA QUALIFICATION	CATEGORY	DESCRIPTION
CO-2011-0144	THE COMMUNICATION CONNECTION B.C. INC.	Yes	No Permit	An assessment determined that regulated work had been performed without the required permit. The duty holder was ordered to stop performing regulated work without a permit where a permit is required.
CO-2011-0145	An Individual	No	No Licence	An assessment determined that regulated work had been performed without the required licence. The duty holder was ordered to stop performing regulated work for others.
CO-2011-0146	An Individual	No	No Licence	An assessment determined that regulated work had been performed without the required licence. The duty holder was ordered to stop performing regulated work for others.
CO-2011-0147	GUARDIAN HEATING & AIR CONDITIONING INC. and an Individual	Yes	No Licence	An assessment determined that regulated work had been performed without the required licence. The duty holder was ordered to stop performing regulated work for others unless evidence of a valid license can be demonstrated.
CO-2011-0149	An Individual	No	No qualification	An assessment determined that regulated work had been performed without the required certificate of qualification. The duty holder was ordered to stop performing regulated work unless evidence of a valid qualification can be demonstrated.
CO-2011-0152	An Individual	Yes	Expired Permit	An assessment determined an expired permit. No response was received from safety officer attempts at notification regarding this matter. The duty holder was ordered to make arrangements for a safety officer inspection or obtain the services of a licensed contractor for the purpose of completing the work.
CO-2011-0153	An Individual	No	No Licence	An assessment determined that regulated work had been performed without the required licence. The duty holder was ordered to stop performing regulated work for others.
CO-2011-0155	RICKY'S ELECTRIC LTD.	Yes	No Permit	An assessment determined that regulated work had been performed without the required permit. The duty holder was ordered to stop performing regulated work without a permit where a permit is required.
CO-2011-0158	An Individual	Yes	Expired Permit	An assessment determined an expired permit. No response was received from safety officer attempts at notification regarding this matter. The duty holder was ordered to make arrangements for a safety officer inspection or obtain the services of a licensed contractor for the purpose of completing the work.
CO-2011-0160	COPPER ISLAND DIVING LTD. and an Individual	No	No Licence	An assessment determined that regulated work had been performed without the required licence. The duty holder was ordered to stop performing regulated work for others.
CO-2011-0161	An Individual	No	No Licence	An assessment determined that regulated work had been performed without the required licence. The duty holder was ordered to stop performing regulated work for others.
CO-2011-0162	KRUGER PLUMBING & HEATING LTD. and an Individual	Yes	No Licence	An assessment determined that regulated work had been performed without the required licence. The duty holder was ordered to stop performing regulated work for others unless evidence of a valid licence can be demonstrated.
CO-2011-0163	ALLCOM ELECTRIC LTD.	Yes	Expired Permit	An assessment determined expired permits. No response was received from safety officer attempts at notification regarding this matter. The duty holder was ordered to perform an inspection of the work and submit a declaration of compliance for each installation.
CO-2011-0165	FEHLING'S SHEET METAL LTD. and an Individual	Yes	No Licence	An assessment determined that regulated work had been performed without the required licence. The duty holder was ordered to stop performing regulated work for others unless evidence of a valid license can be demonstrated.
CO-2011-0169	An Individual	No	No Licence	An assessment determined that regulated work had been performed without the required licence. The duty holder was ordered to stop performing regulated work for others.

Appendix B1

Enforcement Actions – Compliance Orders Issued in 2011

Electrical Continued

COMPLIANCE ORDER Nº.	ISSUED TO	DUTY HOLDER HAS LICENCE OR BCSA QUALIFICATION	CATEGORY	DESCRIPTION
CO-2011-0168	An Individual	No	No Licence	An assessment determined that regulated work had been performed without the required licence. The duty holder was ordered to stop performing regulated work for others.
CO-2011-0170	MARSHALL BROS. ELECTRIC INC.	Yes	No Permit	An assessment determined that regulated work had been performed without the required permit. The duty holder was ordered to stop performing regulated work without a permit where a permit is required.
CO-2011-0173	An Individual	Yes	Performing work beyond scope of qualifications	An assessment determined that regulated work had been performed beyond the scope of the duty holder's qualifications. The duty holder was ordered to stop performing regulated work unless the work can be demonstrated to be within the scope of the particular qualification.
CO-2011-0177	ALPHA NEON LTD. and an Individual	Yes	Expired Licence	An assessment determined that regulated work had been performed without a valid Licence. The duty holder was ordered to stop performing regulated work unless evidence of a valid licence can be demonstrated.
CO-2011-0176	VAN DAMME CONTRACTING CORP. and an Individual	No	No Licence	An assessment determined that regulated work had been performed without the required licence. The duty holder was ordered to stop performing regulated work for others.
CO-2011-0175	R.P.R. HOLDINGS LTD.	Yes	No Permit	An assessment determined that regulated work had been performed without the required permit. The duty holder was ordered to stop performing regulated work without a permit where a permit is required.
CO-2011-0179	An Individual	Yes	Expired Permit	An assessment determined expired permits. No response was received from safety officer attempts at notification regarding this matter. The duty holder was ordered to perform an inspection of the work and submit a declaration of compliance for each installation.
CO-2011-0004	662368 B.C. LTD.	No	Sale of uncertified equipment	An assessment found unapproved electrical equipment displayed and offered for sale. The duty holder was ordered to stop displaying, or offering for sale, any electrical equipment unless it bears evidence of approval.
CO-2011-0007	An Individual	No	Outstanding non-compliance(s)	An assessment identified non-compliances with respect to regulated work. As the duty holder failed to respond to safety officer notifications stipulating a deadline for compliance, the duty holder was ordered to obtain the services of a licensed contractor to correct the non-compliances.
CO-2011-0011	An Individual	No	Use of unqualified workers	An incident investigation identified the duty holder as the person responsible for directing an unqualified individual to perform regulated work. The duty holder was ordered to stop directing, managing, authorizing or counseling unqualified individuals to perform regulated work.
CO-2011-0030	A Company	No	Outstanding non-compliance(s)	An assessment identified non-compliances with respect to the installation of electrical equipment. As the duty holder failed to make arrangements to correct the non-compliances within the required time period, the duty holder was ordered to disconnect the identified equipment and obtain the services of a licensed contractor to correct the non-compliances.
CO-2011-0038	An Individual	No	Outstanding non-compliance(s)	An assessment identified non-compliances with respect to regulated work. As the duty holder failed to respond to safety officer notifications stipulating a deadline for compliance, the duty holder was ordered to obtain the services of a licensed contractor to correct the non-compliances.
CO-2011-0051	An Individual	No	Failure to address a safety hazard	An assessment determined a safety hazard with respect to a regulated installation. As the duty holder failed to respond to safety officer notifications stipulating a deadline for correction, the duty holder was ordered to obtain the services of a licensed contractor to correct the safety hazard.

Appendix B1

Enforcement Actions – Compliance Orders Issued in 2011

Electrical Continued

COMPLIANCE ORDER Nº.	ISSUED TO	DUTY HOLDER HAS LICENCE OR BCSA QUALIFICATION	CATEGORY	DESCRIPTION
CO-2011-0052	MEADOW CREEK CEDAR LTD.	Yes	Outstanding non-compliance(s)	An assessment determined a non-compliance with respect to regulated work. As the duty holder failed to respond to safety officer notifications stipulating a deadline for compliance, the duty holder was ordered to correct the identified non-compliance.
CO-2011-0062	CENTRAL VALLEY RADIATOR LTD.	No	Sale of uncertified equipment	An assessment found the duty holder supplying unapproved electrical equipment. The duty holder was ordered to stop selling any electrical equipment unless it bears evidence of approval.
CO-2011-0064	An Individual and HYDROPONIC SUPPLY LTD.	No	Sale of uncertified equipment	An assessment found the duty holder supplying unapproved electrical equipment. The duty holder was ordered to stop selling any electrical equipment unless it bears evidence of approval, and remove unapproved equipment offered for sale.
CO-2011-0067	An Individual	Yes	Outstanding non-compliance(s)	An assessment identified non-compliances with respect to regulated work. As the duty holder failed to respond to safety officer notifications stipulating a deadline for compliance, the duty holder was ordered to correct the identified non-compliance.
CO-2011-0083	VATA HEALTH PRODUCTS LTD. and an Individual	No	Sale of uncertified equipment	An assessment found the duty holder displaying and offering for sale unapproved electrical equipment. The duty holder was ordered to stop selling any electrical equipment unless it bears evidence of approval, and remove unapproved equipment offered for sale.
CO-2011-0084	An Individual	No	Sale of uncertified equipment	An assessment found the duty holder displaying and offering for sale unapproved electrical equipment. The duty holder was ordered to stop selling any electrical equipment unless it bears evidence of approval, and remove unapproved equipment offered for sale.
CO-2011-0103	FUTECH SIGN & STORE SUPPLIES INC.	No	Sale of uncertified equipment	An assessment found the duty holder displaying and offering for sale unapproved electrical equipment. The duty holder was ordered to stop selling any electrical equipment unless it bears evidence of approval, and remove unapproved equipment offered for sale.
CO-2011-0105	An Individual	No	Outstanding non-compliance(s)	An assessment identified non-compliances with respect to regulated work. As the duty holder failed to respond to safety officer notifications stipulating a deadline for compliance, the duty holder was ordered to obtain the services of a licenced contractor to correct the identified non-compliances.
CO-2011-0117	462065 B.C. LTD. dba FRIESEN ELECTRIC	Yes	Sale of uncertified equipment	An assessment found the duty holder displaying and offering for sale unapproved electrical equipment. The duty holder was ordered to stop selling any electrical equipment unless it bears evidence of approval, and remove unapproved equipment offered for sale.
CO-2011-0123	An Individual and STAR SIGN AND NEON INC.	No	No Licence	An assessment determined that regulated work had been performed without the required licence. The duty holder was ordered to stop performing regulated work for others.
CO-2011-0130	SUKHI ELECTRICAL LTD.	Yes	Use of unqualified workers	An assessment identified two individuals who were performing regulated work. Neither individual was able to produce a certificate of qualification for performing regulated work. The duty holder was ordered to stop allowing unqualified individuals to perform regulated work.
CO-2011-0148-A01	OK MOTEL & MOBILE HOME PARK LTD. and an Individual	No	Outstanding non-compliances	An assessment identified non-compliances with respect to regulated work. As the duty holder failed to respond to safety officer notifications stipulating a deadline for compliance, the duty holder was ordered to obtain the services of a licenced contractor to correct the identified non-compliances.
CO-2011-0164	An Individual	Yes	Use of unqualified workers	An assessment determined the duty holder allowed regulated work to be performed by an unqualified worker on a number of installations without providing the adequate supervision. The duty holder was ordered to stop allowing unqualified individuals to perform regulated work.

Appendix B1

Enforcement Actions – Compliance Orders Issued in 2011

Electrical Continued

COMPLIANCE ORDER Nº.	ISSUED TO	DUTY HOLDER HAS LICENCE OR BCSA QUALIFICATION	CATEGORY	DESCRIPTION
CO-2011-0036	FRASER SEWING SERVICE CANADA LTD.	No	Sale of uncertified equipment	An assessment found unapproved electrical equipment in use. The duty holder was identified as the supplier of the unapproved equipment at one location and was ordered to stop selling electrical equipment unless it bears evidence of approval.
CO-2011-0037	An Individual	Yes	Sale of uncertified equipment	An assessment determined that the duty holder supplied and installed unapproved electrical equipment. The duty holder was ordered to stop selling electrical equipment unless it bears evidence of approval.
CO-2011-0041	An Individual dba SHINY FISH AQUARIUM & POND SERVICES and/or SHINY FISH LTD.	No	Sale of uncertified equipment	An assessment determined that the duty holder supplied and installed unapproved electrical equipment. The duty holder was ordered to stop selling electrical equipment unless it bears evidence of approval.
CO-2011-0156	An Individual	No	Outstanding non-compliance(s)	An assessment identified a non-compliance with respect to the regulated work. As the duty holder failed to respond to safety officer notifications stipulating a deadline for compliance, the duty holder was ordered to obtain the services of a Licenced contractor to correct the identified non-compliance.

Elevating Devices

COMPLIANCE ORDER Nº.	ISSUED TO	DUTY HOLDER HAS LICENCE OR BCSA QUALIFICATION	CATEGORY	DESCRIPTION
CO-2011-0092	KONE INC.	Yes	Provide records	An assessment revealed that two incidents had occurred but were not reported to BCSA. The duty holder was ordered to report all incidents as required by regulation and implement a plan to ensure a consistent practice of reporting incidents in accordance with this requirement.
CO-2011-0091	SCHINDLER ELEVATOR CORPORATION	Yes	No Permit	The duty holder had performed regulated work without submitting the required information package to BCSA. The duty holder is ordered to cease performing regulated work without the necessary permissions.
CO-2011-0104	An Individual	Yes	Outstanding non-compliance(s)	An assessment identified a non-compliance with regard to access and egress for the machine room and hoist way entrance. The duty holder was ordered to correct the non-compliances and provide confirmation to BCSA.
CO-2011-0132	BURDETT MANOR LTD.	Yes	Outstanding non-compliance(s)	An assessment completed in March 2011 identified several non-compliances with regard to regulated equipment. The duty holder was ordered to correct the non-compliances and provide confirmation to BCSA.
CO-2011-0141	KONE INC.	Yes	Outstanding non-compliance(s)	An assessment completed in September 2011 identified several non-compliances with several elevating devices. The duty holder was ordered to correct the non-compliances and provide confirmation to BCSA.

Appendix B1

Enforcement Actions – Compliance Orders Issued in 2011

Gas

COMPLIANCE ORDER Nº.	ISSUED TO	DUTY HOLDER HAS LICENCE OR BCSA QUALIFICATION	CATEGORY	DESCRIPTION
CO-2011-0066	VANCOUVER PUNJAB CLOTH HOUSE INC.	No	Provide records	The duty holder failed to comply with a safety officer's request for information. The duty holder was ordered to provide information with regard to regulated gas appliances in service at a specified location.
CO-2011-0006	An Individual	Yes	No Permit	An assessment determined that regulated work had been performed without the required permit. The duty holder was ordered to stop performing regulated work without a permit where a permit is required.
CO-2011-0005	An Individual	No	No Licence	An assessment determined that regulated work had been performed without the required licence. The duty holder was ordered to stop performing regulated work for others.
CO-2011-0010	An Individual	Yes	No Licence	An assessment determined that regulated work had been performed without the required licence. The duty holder was ordered to stop performing regulated work for others.
CO-2011-0019	A Company	Yes	Use of unqualified workers	An assessment determined that regulated work had been performed by individuals without the required qualifications. The duty holder was ordered to stop allowing unqualified individuals to perform regulated work.
CO-2011-0022	An Individual	No	No Licence	An assessment determined that regulated work had been performed without the required licence. The duty holder was ordered to stop performing regulated work for others.
CO-2011-0023	POLAR AIR CONDITIONING LTD	Yes	No Permit	An assessment determined that regulated work had been performed without the required permit. The duty holder was ordered to stop performing regulated work without a permit where a permit is required.
CO-2011-0024	ACCESS PLUMBING AND HEATING LTD.	Yes	No Permit	An assessment determined that regulated work had been performed without the required permit. The duty holder was ordered to stop performing regulated work without a permit where a permit is required.
CO-2011-0028	An Individual	Yes	No Licence	An assessment determined that regulated work had been performed without the required licence. The duty holder was ordered to stop performing regulated work for others.
CO-2011-0045	An Individual	No	No qualification	An assessment determined that regulated work had been performed without the required certificate of qualification. The duty holder was ordered to stop performing regulated work unless evidence of a valid certificate of qualification can be demonstrated.
CO-2011-0049	An Individual	No	No Licence	An assessment determined that regulated work had been performed without the required licence The duty holder was ordered to stop performing regulated work for others and to provide a list of installations performed within a specific period.
CO-2011-0053	534482 BC LTD. dba ROTO ROOTER PLUMBERS	Yes	No Permit	An assessment determined that regulated work had been performed without the required permit. The duty holder was ordered to stop performing regulated work without a permit where a permit is required.

Appendix B1

Enforcement Actions – Compliance Orders Issued in 2011

Gas Continued

COMPLIANCE ORDER Nº.	ISSUED TO	DUTY HOLDER HAS LICENCE OR BCSA QUALIFICATION	CATEGORY	DESCRIPTION
CO-2011-0055	SPEARS SALES & SERVICE LTD	No	No Permit	An assessment determined that regulated work had been performed without the required permit. The duty holder was ordered to stop performing regulated work without a permit where a permit is required.
CO-2011-0065	An Individual	Yes	No Permit	An assessment determined that regulated work had been performed without the required permit. The duty holder was ordered to stop performing regulated work where a permit is required.
CO-2011-0068	An Individual	No	No Licence	An assessment determined that regulated work had been performed without the required licence. The duty holder was ordered to stop performing regulated work for others.
CO-2011-0073	An Individual	Yes	No Permit	An assessment determined that regulated work had been performed without the required permit. The duty holder was ordered to stop performing regulated work without a permit where a permit is required.
CO-2011-0072	0773843 B.C. LTD. dba COMFORT BY DESIGN HEATING	Yes	Expired Licence	An assessment determined that regulated work had been performed without a valid Licence. The duty holder was ordered to stop performing regulated work for others unless evidence of a valid licence can be demonstrated.
CO-2011-0071	An Individual	Yes	No Permit	An assessment determined that regulated work had been performed without the required permit. The duty holder was ordered to stop performing regulated work without a permit where a permit is required.
CO-2011-0074	An Individual	Yes	No Permit	An assessment determined that regulated work had been performed without the required permit. The duty holder was ordered to stop performing regulated work without a permit where a permit is required.
CO-2011-0075	KING POOL AND SPA SERVICES LTD	No	No Licence	An assessment determined that regulated work had been performed without the required licence. The duty holder was ordered to stop performing regulated work for others.
CO-2011-0082	An Individual	Yes	No Permit	An assessment determined that regulated work had been performed without the required permit. The duty holder was ordered to stop performing regulated work without a permit where a permit is required.
CO-2011-0087	An Individual dba RISKE CREEK MANUFACTURING LTD.	Yes	No Permit	An assessment determined that regulated work had been performed without the required permit. The duty holder was ordered to stop performing regulated work without a permit where a permit is required.
CO-2011-0093	CRESTVIEW PLUMBING AND HEATING INC.	Yes	No Permit	An assessment determined that regulated work had been performed without the required permit. The duty holder was ordered to stop performing regulated work without a permit where a permit is required.
CO-2011-0102	An Individual	Yes	No Permit	An assessment determined that regulated work had been performed without the required permit. The duty holder was ordered to stop performing regulated work without a permit where a permit is required.

Appendix B1

Enforcement Actions – Compliance Orders Issued in 2011

Gas Continued

COMPLIANCE ORDER Nº.	ISSUED TO	DUTY HOLDER HAS LICENCE OR BCSA QUALIFICATION	CATEGORY	DESCRIPTION
CO-2011-0110	An Individual and KRUGER PLUMBING & HEATING LTD	Yes	No Permit	An assessment determined that regulated work had been performed without the required permit. The duty holder was ordered to stop performing regulated work without a permit where a permit is required.
CO-2011-0115	0777858 B.C. LTD. O/A TRI-LAKES MECHANICAL	Yes	No permit	An assessment determined that regulated work had been performed without the required permit. The duty holder was ordered to stop performing regulated work without a permit where a permit is required.
CO-2011-0114	593082 B.C. LTD. O/A BARRY'S PLUMBING	Yes	No Permit	An assessment determined that regulated work had been performed without the required permit. The duty holder was ordered to stop performing regulated work without a permit where a permit is required.
CO-2011-0133	WEST COAST POOL SERVICE LTD.	No	No Licence	An assessment determined that regulated work had been performed without the required licence. The duty holder was ordered to stop performing regulated work for others.
CO-2011-0138	GUARDIAN HEATING & AIR CONDITIONING INC. and an Individual	Yes	No Permit	An assessment determined that regulated work had been performed without the required permit. The duty holder was ordered to stop performing regulated work without a permit where a permit is required.
CO-2011-0150	An Individual	No	No qualification	An assessment determined that regulated work had been performed without the required certificate of qualification. The duty holder was ordered to stop performing regulated work unless evidence of a valid certificate of qualification can be demonstrated.
CO-2011-0151	COOL CONNECTION MECHANICAL LTD.	Yes	No Permit	An assessment determined that regulated work had been performed without the required permit. The duty holder was ordered to stop performing regulated work without a permit where a permit is required.
CO-2011-0167	An Individual	No	No Licence	An assessment determined that regulated work had been performed without the required licence. The duty holder was ordered to stop performing regulated work for others.
CO-2011-0166	CANADIAN SHEET METAL LTD. and an Individual	No	No Licence	An assessment determined that regulated work had been performed without the required permit. The duty holder was ordered to stop performing regulated work without a permit where a permit is required.
CO-2011-0171	QUALITY FIRST PLUMBING & HEATING SERVICES LTD.	Yes	No Permit	An assessment determined that regulated work had been performed without the required permit. The duty holder was ordered to stop performing regulated work without a permit where a permit is required.
CO-2011-0172	An Individual	Yes	No Permit	An assessment determined that regulated work had been performed without the required permit. The duty holder was ordered to stop performing regulated work without a permit where a permit is required.
CO-2011-0178	An Individual	No	No Licence	An assessment determined that regulated work had been performed without the required licence. The duty holder was ordered to stop performing regulated work for others.

Appendix B1

Enforcement Actions – Compliance Orders Issued in 2011

Gas Continued

COMPLIANCE ORDER N°.	ISSUED TO	DUTY HOLDER HAS LICENCE OR BCSA QUALIFICATION	CATEGORY	DESCRIPTION
CO-2011-0181	An Individual and SARSONS MECHANICAL SERVICES LTD.	No	No Permit	An assessment determined that regulated work had been performed without the required permit. The duty holder was ordered to stop performing regulated work without a permit where a permit is required.
CO-2011-0018	150 MILE ENTERPRISES LTD.	Yes	Failure to take regulated safety precautions	An assessment found that propane cylinders were being overfilled in contravention of code requirements. The duty holder was ordered to ensure that qualified individuals dispensing propane do not exceed the maximum filling density of the container.
CO-2011-0021	An Individual	Yes	Use of unqualified workers	An assessment determined that regulated work had been performed and that the duty holder directed an unqualified individual to perform regulated work. The duty holder was ordered to stop authorizing or directing individuals to perform regulated work.
CO-2011-0020	CHET CONSTRUCTION LTD.	No	Failure to take regulated safety precautions	An investigation found the duty holder to have caused the uncontrolled release of natural gas as a result of unsafe excavating practices. The duty holder was ordered to stop excavating except in compliance with the Safety Standards Act and Gas Safety Regulation.
CO-2011-0039	JADEAN HEATING & REFRIGERATION LTD.	Yes	No Permit	An assessment determined that regulated work had been performed without the required permit. The duty holder was ordered to stop performing regulated work without a permit where a permit is required.
CO-2011-0043	An Individual	Yes	Performing work beyond scope of qualifications	An assessment determined that regulated work had been performed beyond the scope of the duty holder's qualifications. The duty holder was ordered to stop performing regulated work unless the work can be demonstrated to be within the scope of the particular qualification.
CO-2011-0056	A Company	Yes	Failure to take regulated safety precautions	An investigation found the duty holder to have caused the uncontrolled release of natural gas as a result of unsafe excavating practices. The duty holder was ordered to stop excavating except in compliance with the Safety Standards Act and Gas Safety Regulation, and to submit a regulatory compliance plan indicating procedures for complying with sections 37 to 49 inclusive of the Gas Safety Regulation.
CO-2011-0069	ACCESS PLUMBING AND HEATING LTD.	Yes	Use of unqualified workers	An assessment determined that regulated work had been performed by an unqualified worker. The duty holder was ordered to stop allowing or directing unqualified individuals to perform regulated work.
CO-2011-0085	An Individual	No	Sale of uncertified equipment	An assessment found regulated equipment that was not approved for use in BC in operation at a specific location. The duty holder was ordered to stop the sale of unapproved equipment unless it bears evidence of approval.
CO-2011-0086	RISKE CREEK MANUFACTURING LTD.	No	Sale of uncertified equipment	An assessment found that the duty holder was offering for sale unapproved regulated equipment. The duty holder was ordered to stop selling regulated equipment unless the equipment bears evidence of approval, provide a list of all units sold, and remove from sale all equipment unless it bears evidence of approval.

Appendix B1

Enforcement Actions – Compliance Orders Issued in 2011

Gas Continued

COMPLIANCE ORDER Nº.	ISSUED TO	DUTY HOLDER HAS LICENCE OR BCSA QUALIFICATION	CATEGORY	DESCRIPTION
CO-2011-0106	An Individual	Yes	Failure to take regulated safety precautions	An assessment determined that regulated work had been performed by the duty holder and was left in an unsafe condition. The duty holder was ordered to stop performing regulated work unless able to ensure all work is performed in a safe and competent manner.
CO-2011-0118	BILLABONG ROAD AND BRIDGE MAINTENANCE INC.	No	Failure to take regulated safety precautions	An investigation found the duty holder to have caused the uncontrolled release of natural gas as a result of unsafe excavating practices. The duty holder was ordered to stop excavating except in compliance with the Safety Standards Act and Gas Safety Regulation and to review excavation practices and develop procedures compliant with the Gas Safety Regulation.
CO-2011-0137	SUNOKA COMFORT SYSTEMS INC. and an Individual	Yes	Outstanding non-compliance(s)	An assessment found non-compliances with regard to regulated work. As the duty holder failed to respond to safety officer notifications stipulating a deadline for compliance, the duty holder was ordered to correct the outstanding non-compliances and submit the appropriate notification to the BCSA.
CO-2011-0154	COUGAR ROCK CONTRACTING LTD	No	Failure to take regulated safety precautions	An investigation found the duty holder to have caused the uncontrolled release of natural gas as a result of unsafe excavating practices. The duty holder was ordered to stop excavating except in compliance with the Safety Standards Act and Gas Safety Regulation and to review excavation practices and develop procedures compliant with the Gas Safety Regulation.
CO-2011-0180	An Individual	Yes	Outstanding non-compliance(s)	Assessments determined several non-compliances with respect to regulated gas work performed at several locations and identified installations where a permit was not obtained prior to performing regulated work. Certificates of inspection required the non-compliances be rectified. The duty holder was ordered to correct the outstanding non-compliances, complete and submit a notification of completion, and to provide evidence of valid permits for all installed regulated equipment.

Appendix B2

Enforcement Actions – Monetary Penalties Issued in 2011

A monetary penalty is an administrative penalty levied by a safety manager in amounts up to a maximum of $100,000 to penalize non-compliant behavior. The following monetary penalties were issued by the BC Safety Authority in 2011.

Notes:

- **The BC Safety Authority is subject to the *Freedom of Information and Protection of Privacy Act*. Provincial legislation restricts the information that may be published with respect to individuals. Accordingly, the BC Safety Authority may provide descriptions of enforcement actions taken against individuals but will only identify corporate entities by name.**
- **dba represents "doing business as"**

Amusement Devices

MONETARY PENALTY Nº.	ISSUED TO	DUTY HOLDER HAS LICENCE OR BCSA QUALIFICATION	CATEGORY	DESCRIPTION
MP-2011-0001	An Individual	Yes	No Permit	A $3800 penalty was imposed on an individual for failing to comply with a compliance order (operating regulated equipment without a valid permit).
MP-2011-0011	VANCOUVER PARTYWORKS INTERACTIVE CO. INC. DBA PARTYWORKS INTERACTIVE and an Individual	Yes	Unsafe use of a regulated product	A $2500 penalty imposed for failing to comply with a compliance order (operating regulated equipment without a valid permit, operating a regulated product in an unsafe condition).

Electrical

MONETARY PENALTY Nº.	ISSUED TO	DUTY HOLDER HAS LICENCE OR BCSA QUALIFICATION	CATEGORY	DESCRIPTION
MP-2011-0003	NORTHERN BC FIRE PROTECTION SERVICES A DIV. OF MCGREGOR'S GARAGE & PROPANE CENTRE LTD.	Yes	Provide records	A $150 daily monetary penalty was imposed on the duty holder for failing to provide records of completed regulated work.
MP-2011-0010	An Individual	Yes	Expired Permit	A $750 monetary penalty was imposed on the duty holder for failing to comply with a compliance order (allowing installation permits to expire and for failing to correct outstanding non-compliances).
MP-2011-0008	ALLPRO ELECTRICAL INCORPORATED	Yes	Expired Permit	A $750 monetary penalty was imposed on the duty holder for failing to comply with a compliance order (allowing installation permits to expire).
MP-2011-0012	OUTREACH NEON LTD	Yes	No Permit	A $500 monetary penalty was imposed on the duty holder for failing to comply with a compliance order (performing regulated work without the required permits).

Gas

MONETARY PENALTY Nº.	ISSUED TO	DUTY HOLDER HAS LICENCE OR BCSA QUALIFICATION	CATEGORY	DESCRIPTION
MP-2011-0002	CHET CONSTRUCTION LTD	No	Failure to take regulated safety precautions	A $250 monetary penalty was imposed on the duty holder for failing to comply with a compliance order (failed to excavate in accordance with the Gas Safety Regulation).
MP-2011-0006	CLOTH HOUSE INC. and an Individual	No	Provide records	A $250 daily monetary penalty was imposed on the duty holder for each day the contravention continued (provide records that regulated gas appliances in service have been maintained and are in safe operating condition).
MP-2011-0009	An Individual	No	Provide records	A $1000 monetary penalty was imposed on the duty holder for failing to comply with a compliance order (performing regulated gas work without a valid permit or Licence, and provide a list of installations performed within a specific period).
MP-2011-0013	An Individual	No	Provide records	A $2000 monetary penalty was imposed on the duty holder for failing to comply with a compliance order (performing regulated gas work without a valid permit or licence, and provide a list of installations performed within a specific period).
MP-2011-0014	An Individual	Yes	No Licence	A $3000 monetary penalty was imposed on the duty holder for failing to comply with a discipline order, several compliance orders and performing regulated work without the required permit, qualification and Licence.

Appendix B3

Enforcement Actions – Discipline Orders Issued in 2011

A discipline order is an enforcement document issued by the BC Safety Authority to a person performing regulated work who:

(a) is in breach of a condition of, or restriction on, any licence or permission,

(b) practices in a discipline under the *Safety Standards Act* for which the contractor is not licenced or qualified,

(c) fails to comply with a compliance order or safety order,

(d) fails to comply with a requirement, term or condition of an Alternative Safety Approach or,

(e) is convicted of an offense under the *Safety Standards Act*.

Compliance with a discipline order is mandatory.

Gas

DISCIPLINE ORDER N°.	ISSUED TO	CATEGORY	DESCRIPTION
DO-2011-0001	DARLING, EUGENE W.	Suspension of a certificate of qualification	The gas safety manager suspended a duty holder's certificate of qualification for failing to comply with compliance orders. The duty holder may not perform any regulated gas fitting work. The duty holder may apply to have the qualification reinstated upon completion of terms set out by the safety manager.
DO-2012-0001	EUGENE DARLING dba GASMAN SERVICES	Suspension of a contractor licence	The gas safety manager suspended a duty holder's gas contractor licence for continued unsafe practices and failure to comply with a discipline order and compliance order. The duty holder may not manage any regulated gas fitting work. The duty holder may apply to have the licence reinstated upon completion of terms set out by the safety manager.

Note: dba represents "doing business as"

Appendix C

Regulatory Instruments

The BC Safety Authority uses certain regulatory instruments to assist with the administration of the *Safety Standards Act* and the *Railway Safety Act*.

- Safety Orders are issued to prevent or reduce the risk of personal injury or damage to property. Compliance is mandatory.
- Directives are instruments that clarify or provide new interpretation of a regulation or code. Compliance is mandatory.
- Information bulletins provide helpful information and clarification on existing regulations or codes.

The tables in this appendix provide details regarding the Safety Orders, Directives and Information Bulletins issued by the BC Safety Authority in 2011.

Boilers and Pressure Vessels

TYPE	DOCUMENT N°.	TITLE	DESCRIPTION
Directive	D-BP 2011-01	Inspection Requirements for Piping Systems and Piping Components	This directive has been subsequently revised following its issuance in 2011. Please refer to the latest revision available. This directive specifies the inspection requirements of Section 82 (c) of the Power Engineers, Boiler, Pressure Vessel and Refrigeration Safety Regulation for non-boiler external piping system components.
Directive	D-B6 070101 1 Revision 03	(Revised) Incident Reporting Requirements with Respect to Boilers, Pressure Vessels and Refrigeration Technology	This directive was revised in 2011 and clarifies the requirement to report incidents. Types of boiler, pressure vessel and refrigeration incidents that must be reported are listed and the method to submit an incident report is provided.
Bulletin	IB-BP 2011-01	New Boiler and Pressure Vessel Codes Adopted	The Power Engineers, Boiler, Pressure Vessel and Refrigeration Safety Regulation was amended in 2011, primarily to adopt revised technical codes. The revised codes and all other changes to the regulation are summarized in this Bulletin.

Electrical

TYPE	DOCUMENT N°.	TITLE	DESCRIPTION
Directive	D-EL 2011-01	BCEC Section 76 – Temporary Wiring	This directive clarifies the interpretation of wiring classification between Temporary and Permanent wiring installations and the application of BCEC Section 76-016 - Receptacles.
Directive	D-E3 070115 1 Revision 03	Incident Reporting Requirements with Respect to Electrical Technology	This directive was revised in 2011 and is issued to businesses and contractors to provide clarity of reporting requirements for electrical incidents.
Bulletin	IB-EL 2011-01	Section 76 – Temporary Wiring	This information bulletin accompanies Directive D-EL 2011-01 and provides additional information and discussion regarding the application of section 76 of the BC Electrical Code to temporary wiring methods and receptacles – particularly the requirements for use of receptacles with (Ground Fault Circuit Interruption (GFCI) protection.
Bulletin	B-E3 100224 1 Revision 02	Minimum Requirements Retrofit of Fluorescent Luminaires	This information bulletin was revised in 2011 and provides clarification on permit and certification requirements for work performed on fluorescent light fixtures.
Bulletin	B-E3 071019 3 Revision 01	Approved Certification Marks for Electrical Products	This information bulletin was revised in 2011 and provides a complete listing of all marks and labels applied to electrical equipment that are considered acceptable evidence of approval within the province of British Columbia.

Appendix C

Regulatory Instruments

Elevating Devices

TYPE	DOCUMENT Nº.	TITLE	DESCRIPTION
Safety Order	SO-L1 110225 4	Driving Machine Brake – Electric Elevators	The Safety Order provides requirements around the examination and testing, declarations, reporting and maintenance and applies to all driving machine brakes conforming to the B44 Safety Code for Elevators and Escalators.
Directive	D-L4 110303 1	Ventilation of Hydraulic Machine Rooms for Lifts for Persons with Physical Disabilities	This directive was issued to all licensed elevating devices contractors to clarify the requirements regarding hydraulic machine room ventilation of lifts for persons with physical disabilities.
Directive	D-L4 110303 2	Periodic Tests Declarations	This directive specifies the intervals the relevant periodic tests declarations must be submitted to the BCSA. These intervals vary depending on the type of elevating device.
Directive	D-L4 110303 3	Completion of Non-Compliances	Section 20(3) of the Safety Standards General Regulation requires non-compliances recorded on a Certificate of Inspection be corrected and that the safety officer be notified that the corrections be completed. This directive specifies the forms and method to notify the elevating devices technology when non-compliances are complete.
Directive	D-L4 110303 4	Installation of Glass or Mirrors on Lifts for Persons with Physical Disabilities	This directive was issued to all licensed elevating devices contractors to communicate the Code's requirements around the applicable glass standards required for installations in elevating devices.
Directive	D-L4 110803 5	Major and Minor Alterations	This directive was issued to all licensed elevating devices contractors to clarify requirement 25 of the Elevating Devices Safety Regulation regarding the submission and filing requirements for minor or major alterations of an existing elevating device.
Bulletin	B-L4 110225 3	Driving Machine Brake – Electric Elevators	This Information Bulletin accompanies safety order SO-L1 and provides additional information and to further explain the safety requirements.
Bulletin	B-L4 110413 2	Firefighters Emergency Operations (FEO) Requirements	Code clause 2.27.3 of the recently adopted CAN/CSA B44-2007 Safety Code for Elevators and Escalators requires FEO on new elevators, certain existing electric elevators, and certain existing hydraulic elevators. This information bulletin was issued to building owners, property managers, elevator consultants and licensed elevating contractors and explains actions required by the Code clause.
Bulletin	B-L4 110803 4	Elevating Devices Internal Cab Modernization	This information bulletin accompanies directive D-provides notification that all modernizations will be specified as 'major alterations' to better align with the B44 Code requirements.

Appendix C

Regulatory Instruments

Gas

TYPE	DOCUMENT Nº.	TITLE	DESCRIPTION
Directive	D-G5 070628 5 Revision 02	(Revised) Plastic Venting	This directive has since been revised to Revision 03 – Please refer to the latest revision available. This directive is issued in response to findings where some certified products endorsed the use of plastic vent components that were contrary to adopted codes and standards. This directive clarifies acceptable plastic vent installations and provides instructions for required maintenance and replacement for previously installed plastic venting.
Directive	D-GA 2011-01	B149.1 & .2 Interpretation, Application and Operation	This directive lists numerous paragraphs in the CSA B149.1 and B149.2 Gas codes and provides interpretation and application guidance.
Bulletin	B-G5 110401 1	Gas Equipment/Product Approval Application Function Disabled Via BC Online and Service BC	This bulletin informs clients and contractors that "New Product Approvals" function under the Gas Product Approval section of BC OnLine is no longer available. This online service was removed following an incident and discovery that some application criteria was being entered incorrectly by clients and users, resulting with misleading information about the certification status of equipment being installed.
Bulletin	B-G5 110816 2	Adoption of the 2010 Editions of the CSA B149 Codes	This bulletin informs clients and contractors that revised editions of certain technical codes have been adopted and compliance is now required by regulation. The following lists the adopted codes: • CAN/CSA-B149.1-10 Natural Gas and Propane Installation Code • CAN/CSA-B149.2-10 Propane Storage and Handling Code • CAN/CSA-B149.3-10 Code of the Field Approval of Fuel-Related Components on Appliances and Equipment • CAN/CSA-B149.5-10 Installation Code for Propane Fuel Systems and Tanks on Highway Vehicles • CSA-B109-01 Natural Gas for Vehicles Installation Code • CAN/CSA-Z662-07 Oil and Gas Pipeline Systems • CAN/CGA-B105-M93 Code for Digester Gas and Landfill Gas Installations • CSA B214-07 Installation Code for Hydronic Heating Systems – the following clauses only: 4.5.3.2, 4.5.4, 5.1, 5.2.1, 5.3.1, 5.3.2 and 12.4
Bulletin	N/A	Clothes Dryer Appliance & Venting Maintenance	This bulletin informs clients and contractors of the potential fire and carbon monoxide poisoning hazards that are presented when gas fuelled dryers are not regularly maintained. The venting systems of these devices require regular cleaning to prevent the buildup of lint.

Passenger Ropeways

TYPE	DOCUMENT Nº.	TITLE	DESCRIPTION
Safety Order	SO-P4 110531 1	Passenger Ropeway Foot Passenger Loading Areas	This Safety Order is issued in response to incidents where falls from the loading areas onto hard surfaces resulted with serious injury or death. The order requires all operators to review loading areas and install suitable fall protection equipment.
Safety Order	SO-P4 110621 2	Leitner Poma "X-Y" Sheave Assembly Axle Adjustment Bolts	This Safety Order is issued in response to incidents involving Leitner Poma detachable above surface passenger ropeways. The safety order requires certain actions to be taken by operators to retain "X-Y" sheave assembly bolts in the event of a bolt failure and stop potential axle movement. Unretained bolts present a hazard to persons under the ropeway and axle movement could result with a deropement.

Appendix D

Listing of Industry Associations and National Codes & Standards Associations where BCSA Participates

BC Safety Authority employees participate with industry associations and lead many technical code and standard developments. Participation ensures that challenges facing BC industries are represented and influence national codes and standards development. The following lists those Industry Associations and National Codes and Standards Associations that BCSA employees participated with in 2011.

AMUSEMENT RIDES

Industry Associations

- National Association of Amusement Ride Safety Officials

National Codes and Standards Associations

- Canadian Standards Association CSA 267 Amusement Device Code
- American Standards for Testing and Materials F24 Committee

BOILERS, PRESSURE VESSELS, REFRIGERATION

Industry Associations

- BC Bioenergy Network
- Building Owners and Managers Association
- Canadian Bioenergy Association

National Codes and Standards Associations

- American Society of Mechanical Engineers
- Association of Chief Inspectors Technical Committee
- Canadian Standards Associations Technical Committee
- National Board of Boiler & Pressure Vessel Inspectors
- National Public Safety Advisory Committee
- Standardization of Power Engineer Examinations Committee

ELECTRICAL

Industry Associations

- BC Electrical Association
- British Columbia Real Estate Association
- Electrical Contractors Association of BC

National Codes and Standards Associations

- Canadian Advisory Committee on Electrical Safety – Canadian Standards Association Part 1

ELEVATING DEVICES

Industry Associations

- BC Apartment Owners and Managers Association
- BC Hotel Association
- BC Housing
- BC Non-Profit Housing Association
- Building Owners and Managers Association of BC
- Condominium Home Owners Association
- Health Authorities
- Rental Owners and Managers Society of BC

National Codes and Standards Associations

- Association of Provincial Chief Elevator Inspectors
- Advisory Council on Elevating Devices
- Canadian Standards Association CSA-B44 Elevator Safety Code
- Canadian Standards Association CSA-B44 Elevator Safety Code Executive Committee
- Canadian Standards Association CSA-B44/ASME A171 Joint Elevator Safety Code
- Canadian Standards Association CSA-B44/ASME A17.5 Elevator & Escalator Electrical Equipment Code
- Canadian Standards Association CSA-B311 Manlifts Safety Code
- Canadian Standards Association CSA-B355 Lifts for Persons with Physical Disabilities Safety Code
- Canadian Standards Association CSA-Z256 (R2001) Safety Code for Construction Hoists
- Canadian Standards Association CSA-Z185 (Construction) Personnel Hoists Safety Code

GAS

Industry Associations

- BC Common Ground Alliance
- Canadian Association of Home and Property Inspectors
- Propane Gas Association of Canada (now Canadian Propane Association)

National Codes and Standards Associations

- Interprovincial Gas Advisory Committee
- Canadian Standards Association CSA B149 Technical Committee and Subcommittees
- Canadian Standards Association CSA Gas Appliance Technical Committee
- Canadian Standards Association CSA Joint Technical Committee on Fuel Cell Technologies

PASSENGER ROPEWAYS

Industry Associations

- Canada West Ski Areas Association
- International Meeting of Technical Supervisors in Ropeway Engineering (ITTAB)

National Codes and Standards Associations

- Canadian Standards Association CSA-Z98 Technical Committee

Appendix E

Listing of 2011 Media Releases

The BC Safety Authority issues media releases to warn of specific hazards and advise the public of steps that they can take to reduce their risk of injury. In 2011, the BC Safety Authority issued the following media releases to raise awareness of safety hazards and reduce risk.

DATE	TITLE	INDUSTRY SECTOR	SYNOPSIS
29 December	What you don't know can kill you – so can what you don't smell.	Gas	BCSA issued a joint media release with Our Place Society (Victoria) to raise awareness of carbon monoxide hazards and the importance of leaving fuel-burning appliances outside.
19 December	Powder Patrol goes High Tech	Passenger Ropeways	Passenger behavior contributes to lift-related injury in BC and these accidents and injuries on ski lifts can be prevented. BCSA hosted three on-mountain events to remind snow sport enthusiasts how to ride chairlifts correctly.
22 November	BC Safety Authority: enforcing safety in our community	General	BCSA issued more than 140 compliance orders and 8 monetary penalties actions against contractors, equipment owners and others doing work or using regulated equipment in BCSA-regulated industry sectors.
7 November	Child's shoe eaten by escalator	Elevating Devices	Most incidents on escalators that involved children are preventable. The BCSA encourages parents to encourage children to ride mechanical devices such as moving walkways, elevators and escalators safely at an early age.
7 September	Carbon monoxide alarms are as important as smoke alarms	Gas	Carbon monoxide is odourless, colourless and poisonous. BCSA recommends installing a carbon monoxide alarm in addition to regular service of gas appliances by a licensed gas contractor to reduce the risk of carbon monoxide poisoning.
6 September	Gas and electrical equipment safety during forest fires	Gas and Electrical	Electrical equipment and gas appliances damaged by fire can be dangerous if they are re-energized without being properly inspected by a licensed contractor. The media release provides recommendations for homeowners and occupants in communities impacted directly by a fire.
22 August	Excavating contractors pay up for gas line hits	Gas	BCSA collected a monetary penalty from an excavating company through a seizure of assets pursuant to a court order.
22 August	Consequences for creating undue risk	General	Operating outside the safety system creates undue risk. Enforcement actions are a component to manage these safety risks by promoting compliance with safety standards and legislation.
6 June	Camping... grilling... are you handling propane safely?	Gas	Using propane comes with inherent risks if used inappropriately. Serious accidents can be prevented by checking the equipment set up before using it.
20 May	A safe RV season starts with a propane primer	Gas	Explosions and carbon monoxide poisonings due to propane leaks are rare, but they are still a risk worth considering before using your recreational vehicle. The propane system in a recreational vehicle must be well-maintained and properly used to prevent accidents and injury.
16 May	Gas and electrical equipment safety in floods	Gas and Electrical	Electrical equipment and gas appliances exposed to flood waters can be dangerous if re-energized and used without being properly inspected by a licensed contractor. BCSA reminds homeowners and businesses to take precautions with gas and electrical appliances when flooding is expected.
9 May	Stay safe on amusement rides this summer	Amusement Rides	BCSA reminds everyone to think of safety even while having fun on amusement rides.

Appendix E

Listing of 2011 Media Releases

DATE	TITLE	INDUSTRY SECTOR	SYNOPSIS
3 May	Enforcing safety – everyone expected to play by the rules	General	BCSA took 51 enforcement actions between January 1 and March 31, 2011 to promote compliance with safety standards and legislation. The 51 enforcement actions were compliance orders.
21 April	Planning on digging up a gas line this weekend?	Gas	Gas lines, electrical wires and a network of buried facilities are at risk of being damaged during any type of digging or ground disturbance. A safe approach includes contacting BC One Call before digging because knowing the underground environment can reduce the potential risk of damaging buried facilities.
11 April	If it came down to you versus train, who do you think would win?	Railways	Accidents and injuries on commuter trains like SkyTrain and Canada Line can be avoided if commuters follow the posted safety rules, teaching children about staying safe around trains, and having respect for the speed and power of trains.
10 March	BC Safety Authority takes 192 enforcement actions in 2010	General	In 2010, BCSA took 192 enforcement actions against contractors, equipment owners and others doing work in BCSA-regulated industry sectors for failing to comply with safety requirements and unlawfully performing regulated work. Monetary penalties ranged in value from $750 to $23,000.
18 February	Permits for peace of mind	Gas and Electrical	Two families on Vancouver Island discovered safety hazards after hiring individuals to "do some electrical work." They recommend to other homeowners that if the renovations include work with gas or electricity, hire a qualified professional with proper permits.
31 January	Are you wired for safety	Electrical	Fire-related incidents account for the majority of incidents investigated by BCSA's electrical safety officers. BCSA provides electrical safety tips in an attempt to prevent electrical fires from destroying homes and businesses .
10 January	Stay safe, keep your gas meter clear of snow and ice	Gas	Due to heavier snowfalls in winter 2010, BCSA provides tips for home-owners to take extra care of their gas meters. Snow and ice on a gas meter can damage fittings and pipes and cause leaks. Snow and ice can also impede the meter's function of controlling the gas pressure, which could lead to serious risks.

Appendix F

Tech Talks conducted in 2011

Electrical

TITLE / TOPIC	DESCRIPTION	NO. OF PARTICIPANTS
101 Things Every Electrician Should Know	This Tech Talk reviews rules and regulations that apply to day-to-day work that participants should be familiar with. The talk is organized as a Q & A quiz: questions are posed, answers given, and the applicable rule or regulation is highlighted. Discussion is encouraged.	651
Electrical Workplace Safety / Arc Flash Prevention	This talk was a pilot discussion covering the changing attitudes toward electrical safety, applicable acts and regulations, electrical hazards, and risk management. Specific topics include identifying hazards, prevention practices, forms of Personal Protective Equipment (PPE), and safety training.	196
Barn Wiring / BCSA Website Navigation	This talk is focused towards electricians, electrical contractors, and any individual who might consider wiring their own barn or out-building. The talk takes participants through an examination of the unique conditions associated with wiring barns safely for their inhabitants. Other topics include discussion of applicable electrical and building codes, wiring requirements, and bio-security issues.	14
Electrical Technology General Meeting / Q & A	This talk did not follow a planned format but allowed industry the opportunity to ask Electrical Safety Officers questions and discuss responses outside of the traditional assessment environment.	70
Disposal / Sale of Manufactured Homes	This talk is oriented towards professionals (i.e. real estate agents) who deal with the disposal or sale of manufactured homes, and electricians and electrical contractors who work on manufactured homes. Topics include applicable regulations and directives and the seller's responsibilities in the transaction. Other topics covered include the process for obtaining BCSA approval for wiring and requirements and processes for equipment labels.	161
Generators	This talk covers codes and regulations that apply to installation, maintenance and testing of generator systems, and other general requirements for these systems. Specific topics addressed include loading and sizing, transfer switches, grounding and bonding, and applicable wiring methods.	98
Section 60 – Electrical Communication Systems	This Q&A formatted talk poses questions focused on the requirements for safe installation of electrical communication systems, including cabling and circuits. 25 questions are posed, answers are given, and the applicable rule or regulation is highlighted. Discussion is encouraged.	296
Low Voltage Services Part 1	This talk is focuses on services less than 750 volts or residential or commercial services to 400 amps, applicable codes, regulations, directives and advisories are covered. Specific topics include overhead services, underground services, supply services permitted, system grounding, temporary power connections, wiring methods, and BC Hydro requirements.	197
Low Voltage Services Part 2	Part 2 of this topic includes applicable codes and regulations, and the implications of federal legislation (Bill C-45) for worker safety. Specific topics include shock and arc flash protection, hazard and risk assessment, Personal Protective Equipment (PPE), employer and employee responsibilities for safety, and training.	25
Section 24 – Patient Care Areas	This talk covers applicable code and regulations, including CAN/CSA Z32-09 and its correlation with Section 24. Specific topics include terminology, types of health care facilities, and technical issues including requirements for receptacles, voltage differences, circuits and branch circuits, bonding, receptacles, and transfer switches. The talk concludes with recommendations for making installations compliant.	65

Gas

TITLE / TOPIC	DESCRIPTION	NO. OF PARTICIPANTS
2010 Gas Code Changes and Spring 2011 BCSA Gas Safety Program Technical Meeting	This presentation includes a review of the changes to the 2010 B149 Natural Gas & Propane Installation Code. Sections 4, 5, 6, 7 and 8 are reviewed in detail and the specific code changes highlighted.	152

Appendix G

Definitions

Assessment – An evaluation or review of regulated work that may include physical inspection or audit.

Audit – A review focused on the safety outcomes of a system or process.

Certificate of Inspection – A document issued by the BC Safety Authority to a permit holder upon completion of an inspection. This document identifies any non-compliances with respect to the regulated work or regulated product that must be corrected by the permit holder.

Certificate of Qualification – A certificate issued by the BC Safety Authority to an individual who provides evidence of their knowledge and ability to do regulated work in a manner that meets the requirements under the *Safety Standards Act* and which allows an individual to perform regulated work in British Columbia within the scope of the certificate.

Compliance Order – A document issued to a person by the BC Safety Authority that specifies actions to be taken, stopped or modified where, in the opinion of the BC Safety Authority, there exists a risk of personal injury or damage to property associated with work or products regulated by the *Safety Standards Act*.

Directive – A regulatory instrument that clarifies or provides new interpretation, application or operation of a regulation or code. Compliance is mandatory.

Discipline Order – A document issued by the BC Safety Authority to a person performing regulated work who:

a. is in breach of a condition of, or restriction on, any licence or permission,

b. practices in a discipline under the *Safety Standards Act* for which the contractor is not licenced or qualified,

c. fails to comply with a compliance order or safety order

d. fails to comply with a requirement, term or condition of an Alternative Safety Approach or,

e. is convicted of an offense under the *Safety Standards Act*

Compliance with a discipline order is mandatory.

Incident – An event that occurred as a result of regulated work or equipment that either caused death, personal injury or damage to property, or created a risk of personal injury or damage to property.

Severe incident – An event that either caused or was likely to have caused fatal or permanent injury. Severe incidents may also be referred to as "Level 1" incidents.

Major incident – An event that either caused or was likely to have caused major injury and/or extensive property or equipment damage. Major incidents may also be referred to as "Level 2" incidents.

Minor incident – An event that caused or was likely to have caused minor injury and/or minor property or equipment damage. Minor incidents may also be referred to as "Level 3" incidents.

Note: Incidents identified as *UNDER INVESTIGATION* were open at the time of this report preparation. Information related to open investigations is subject to change and verification therefore, discussion of these incident details is excluded.

Information Bulletin – A document issued to provide helpful information and clarification on existing regulations or codes.

Inspection – A review focused on the identification of unsafe conditions and compliance to prescriptive regulations or standards.

Installation Permit – A permission that is required to install or alter a regulated product. An installation permit may be issued to a licensed contractor, a person who holds an operating permit, an owner of a regulated product or a homeowner who performs regulated work as permitted under the regulations.

Injury – Any physical damage to the body caused by an event that occurs as a result of regulated work or equipment, further classified as:

Fatal injury – An injury causing death.

Major injury – An injury that involves long-term impairment of function or loss of function of any body part, organ or mental faculty, significant physical pain and some disability or loss of function; examples include fractures, internal injuries or wounds that are serious but may be not life-threatening, or considerable exposure to noxious substances. Medical attention is required.

Minor injury – A non-permanent injury that may require some medical or first-aid treatment; examples include lacerations, contusions, abrasions, or other injuries that have no residual effect. Further professional medical attention is not usually required.

Appendix G

Definitions

Licence – A permission that allows a person, company or corporation to perform regulated work.

Monetary Penalty – An administrative penalty levied by a safety manager in amounts up to a maximum of $100,000 to penalize non-compliant behavior.

Non-compliance – A failure of a regulated product or work to conform with applicable Acts and Regulations.

Operating Permit – A permission issued by the BC Safety Authority that allows the operation and maintenance of a regulated product. An operating permit may be issued to the owner of a regulated product or building where regulated work is to be performed.

Physical Assessment – An assessment where the regulated product or work has been directly evaluated by the BC Safety Authority.

Railway Classes – types of railways regulated by BC Safety Authority:

Common carrier railways transport passengers and/or goods and interchange common rolling stock with other railways.

Commuter railways exclusively provide rail transportation for passengers in or between urban and/or suburban locations.

Heritage railways operate or move only railway equipment of historical significance.

Industrial railways exclusively serve and move railway equipment through track switches at industrial sites or as designated by the authority having administrative responsibility.

Reportable Railway Accident – An accident resulting directly from the operation of a railway where:

a. a person sustains a serious injury or is killed as a result of being on board or getting on or off the rolling stock, or coming into contact with any part of the rolling stock or its contents; or

b. the rolling stock is involved in a grade crossing collision, is involved in a collision or a derailment and is carrying passengers or sustains damage that affects its safe operation; or

c. causes or sustains a fire or explosion or causes damage to the railway that poses a threat to the safety of any person, property or the environment

Reportable Railway Incident – An incident resulting directly from the operation of rolling stock where; a risk of collision occurs, an unprotected main track switch is left in an abnormal position, a railway signal displays a less restrictive indication than required for the intended movement of rolling stock, an unprotected overlap of operating authority occurs, the movement of rolling stock exceeds the limits of its authority, if there is runaway rolling stock, or any crew member whose duties are directly related to the safe operation of the rolling stock is unable to perform the crewmember's duties as a result of a physical.

Risk Reduction Working Group – A group of industry subject matter experts formed to address a specific safety issue, activity or project. Risk Reduction Working Groups research, analyze and make recommendations on a specific safety aspect to their respective technical advisory committee and may be dissolved when the outcome is delivered.

Safety Order – A regulatory instrument issued to prevent or reduce the risk of personal injury or damage to property. Compliance is mandatory.

Technical Advisory Committee – A non-decision-making body comprised of volunteer industry representatives that has a role of identifying and advising the BC Safety Authority on issues related to technical safety, regulatory change and service delivery.

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Safety Authority

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